



# CAPE FEAR COMMUNITY COLLEGE

W I L M I N G T O N ,   N O R T H   C A R O L I N A



*Catalog 1994 - 1996*



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# **CAPE FEAR COMMUNITY COLLEGE**

411 NORTH FRONT STREET  
WILMINGTON, NORTH CAROLINA 28401-3993  
(910) 251-5100

## **CATALOG 1994-1996**



# CAPE FEAR COMMUNITY COLLEGE

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## NOTE

This catalog is published for the purpose of providing information about the College and its programs. Announcements contained herein are subject to change without notice and may not be regarded in the nature of binding obligations on the College or the State. Efforts will be made to keep changes to a minimum, but changes in policy by the North Carolina State Legislature, the Department of Community Colleges, or by local conditions may make some alterations in curricula, fees, etc., necessary.

## PRIVACY RIGHTS ACT OF PARENTS AND STUDENTS

PUBLIC LAW 93-380—Cape Fear Community College adheres to the Guidelines developed by the Department of Health, Education and Welfare regarding the Privacy Rights of Parents and Students.

The College provides students and parents of dependent students access to official records directly related to them and limits dissemination of personally identifiable information without the students' consent. Students enrolled at Cape Fear Community College may review guidelines and procedures regarding Public Law 93-380 in the offices of Admissions and Records. Procedures for challenging such record may also be obtained in these offices.

## NON-DISCRIMINATION POLICY

Cape Fear Community College's Board of Trustees and Staff recognize the importance of equal opportunity in all phases of the College's operations and have officially adopted a position of nondiscrimination on the basis of race, color, age, religion, national origin, physical handicap, or other non-relevant factors. This policy applies to both students and employees at all levels of the school's operations.

## VISITORS

Visitors are always welcome at Cape Fear Community College. The Student Development office will provide guide service for groups or individuals on weekdays between 8:00 AM and 5:00 PM and will answer questions about the school and its programs. Prospective students are requested, when possible, to notify the Student Development office when they are going to visit. This will ensure that appropriate staff will be available for questions. The school is open until 10:00 PM Monday through Friday and individuals may visit at their convenience.

Cape Fear Community College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award associate degrees. The address and telephone number of the Southern Association of Colleges and Schools is 1866 Southern Lane, Decatur, GA 30033-4097 (404) 679-4500.

Cape Fear Community College is a member institution of the North Carolina Department of Community Colleges and the American Association of Community and Junior Colleges.

**"ADMISSION TO ANY AND ALL EDUCATIONAL PROGRAMS OFFERED BY CAPE FEAR COMMUNITY COLLEGE IS MADE WITHOUT REGARD TO RACE, COLOR, SEX, RELIGION, NATIONAL ORIGIN, PHYSICAL HANDICAP OR OTHER NON-RELEVANT FACTORS."**

**May 1994**

**Cape Fear Community College**

**15,000 copies of this public document were printed at a cost of \$11,389.17 or \$0.76 each.**

**Affirmative Action / Equal Opportunity College**

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FREDA WILKINS

WILMINGTON, NORTH CAROLINA



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## Foreword

The entire Cape Fear Community College family—faculty and staff, trustees, fellow students, and friends and supporters—joins me in welcoming your consideration of Cape Fear Community College as you develop specific plans for your future. We trust that our small classes, personable college staff, and lots of individual attention, in combination with your dedicated efforts, will enable you to experience a high degree of success and satisfaction at this institution.

Getting off to a good start is most important, and after you've reviewed the information in this catalog, our counseling staff and faculty advisors welcome the chance to provide additional assistance. Call (910) 251-5100 today for an appointment!

Your future begins now—welcome to Cape Fear Community College!

Eric B. McKeithan  
President

## Calendar 1994-96

### FALL 1994

Registration ..... September 1-2, 1994  
 Holiday/Labor Day ..... September 5, 1994  
 Professional Development ..... September 6-7, 1994  
 Classes Begin ..... September 8, 1994  
 Pre-Registration For Winter ..... November 1-2, 1994  
 Classes End ..... November 23, 1994

### WINTER 1994

Thanksgiving Holidays ..... November 24-25, 1994  
 Registration ..... November 2-29, 1994  
 Classes Begin ..... November 30, 1994  
 Student & Faculty Holidays ..... Dec. 19 - Dec. 30, 1994  
 College Offices Closed ..... Dec. 22, 23, 26, 30, 1994  
 Classes Resume ..... January 2, 1995  
 Martin Luther King Holiday ..... January 16, 1995  
 Pre-Registration For Spring ..... February 13-14, 1995  
 Classes End ..... March 1, 1995

### SPRING 1995

Registration ..... March 6-7, 1995  
 Classes Begin ..... March 8, 1995  
 Easter Holiday ..... April 14, 1995  
 Pre-Registration For Summer ..... May 8-9, 1995  
 Early Registration For Fall ..... May 18, 1995  
 Classes End ..... May 24, 1995  
 Graduation ..... May 26, 1995  
 Memorial Day ..... May 29, 1995

### SUMMER 1995

Registration ..... May 30, 1995  
 Classes Begin ..... May 31, 1995  
 July 4 Holiday ..... July 4, 1995  
 Student and Faculty Holiday ..... July 3-7, 1995  
 Pre-Registration For Fall ..... August 8-9, 1995  
 Classes End ..... August 22, 1995  
 Graduation ..... August 24, 1995

### FALL 1995

Registration ..... August 31 - September 1, 1995  
 Holiday ..... September 4, 1995  
 Professional Development ..... September 5-6, 1995  
 Classes Begin ..... September 7, 1995  
 Pre-Registration For Winter ..... November 1-2, 1995  
 Classes End ..... November 22, 1995

### WINTER 1995

Thanksgiving Holidays ..... November 23-24, 1995  
 Registration ..... November 27-28, 1995  
 Classes Begin ..... November 29, 1995  
 Student & Faculty Holidays ..... Dec. 19 - Jan. 1, 1996  
 College Offices Closed  
 ..... Dec. 21, 22, 25, 26, 1995 - Jan. 1, 1996  
 Classes Resume ..... January 2, 1996  
 Martin Luther King Holiday ..... January 15, 1996  
 Pre-Registration For Spring ..... February 6-7, 1996  
 Classes End ..... February 28, 1996

### SPRING 1996

Registration ..... March 4-5, 1996  
 Classes Begin ..... March 6, 1996  
 Easter Holiday ..... April 5, 1996  
 Pre-Registration For Summer ..... May 7-8, 1996  
 Early Registration For Fall ..... May 15, 1996  
 Classes End ..... May 22, 1996  
 Graduation ..... May 24, 1996  
 Memorial Day ..... May 27, 1996

### SUMMER 1996

Registration ..... May 28, 1996  
 Classes Begin ..... May 29, 1996  
 July 4 Holiday ..... July 4, 1996  
 Student and Faculty Holiday ..... July 1-5, 1996  
 Pre-Registration For Fall ..... August 6-7, 1996  
 Classes End ..... August 20, 1996  
 Graduation ..... August 22, 1996



## *Administration*

The Honorable Robert W. Scott, ..... Department of Community Colleges, State President

Dr. Eric B. McKeithan ..... Cape Fear Community College, President

## **STATE BOARD OF COMMUNITY COLLEGES**

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President, Student Government Association ..... Cape Fear Community College

# *The College*

## **History**

The College was established as the Wilmington Industrial Education Center in 1959 under the direction of the late George H. West. It was raised to technical institute status on July 1, 1964 and renamed Cape Fear Technical Institute. To more clearly reflect the role and mission of the school, the Board of Trustees recommended that the school again change its name. The New Hanover County Commissioners concurred with the Board, and on January 1, 1988 the school officially became Cape Fear Community College (CFCC).

CFCC is one of fifty-eight such institutions operated by the State under the direction of the State Board of Community Colleges and administered by a local Board of Trustees. The System was authorized by the North Carolina General Assembly, Chapter 115D (originally 115A) of the General Statutes.

The College was one of the original industrial education centers and was operated from 1959 until 1963 by the New Hanover Board of Education. Following a favorable vote of the citizens of the County on a \$575,000 bond issue to provide a technical institute facility and a \$0.02 tax levy for its support, \$500,000 in matching funds from the 1963 Vocational Education Act Appropriation was authorized to be applied toward facility construction.

The College continued to operate in County-owned buildings until new facilities were completed in the summer of 1967. These facilities included a four story main building, a separate automotive shop, and a pier and docking facility for the school's training vessels.

In 1969 the College was granted status as a Special Purpose Institute by the Southern Association of Colleges and Schools. The following year the Southern Association's Commission on Colleges granted membership to the College contingent upon successfully completing a self-study within the next five years. This was accomplished and at the Association's Annual Meeting in 1975, the College was granted full membership status.

In the General Election of 1972, the citizens of New Hanover County approved another bond issue for \$3,676,000 for the expansion of the College's facilities. This resulted in a modern seven story building that provided valuable additional classrooms, shops, and office space, with one floor devoted to the LRC.

In 1982 and 1989 the New Hanover County Commissioners responded favorably to a request made by the Board of Trustees for facilities to house the electronic and instrumentation technologies curricula and the renovation of one of its buildings to house classrooms, lab, and office space for the new Associate Degree Nursing program.

In 1986 and again in 1988 the State Legislature appropriated \$300,000 for the construction of a satellite facility in Pender County. With the Pender County Commissioners donating 11 acres of land, \$200,000, and an additional \$75,000 for landscaping, to that already appropriated by the Legislature, a 15,000 square foot building was opened at the Pender County Campus in Burgaw in June 1990.

The citizens of North Carolina voted on November 2, 1993 to pass a 7.3 million dollar bond referendum for CFCC. On March 8, 1994 the residents of New Hanover County passed another bond referendum which will provide an additional 13.9 million dollars. The total of over 21 million dollars will be used for construction to provide three major buildings for the College.

March 1994, Cape Fear Community College began day and evening classes in the vacant Topsail Middle School building. This gave Pender County a second satellite unit for the College. The CFCC campus in Burgaw serves the citizens of western Pender County and the new Hampstead Campus will provide classes and instruction for Pender County residents on the eastern side of the county.

The number of people served annually by the College has risen from approximately 750 during its early years of operation to more than 19,000 in recent years.

## **Purpose**

Cape Fear Community College is a unique, comprehensive, public two-year college with a mission to provide:

"An environment conducive to achieving maximum learning potential;

"Academic and career guidance; academic and life-long learning for adults that will meet their educational, vocational, and avocational needs;

"Programs that enrich the economic, social, and cultural needs of adults and the community, and

"Review and revision, as well as additions to, existing programs and services to ensure that the College is meeting the needs of the people it serves."

## **Location**

Cape Fear Community College is conveniently located in the heart of Wilmington on North Front Street. The campus extends from Front Street to the deep water channel of the Cape Fear River and is bordered by Red Cross Street on the north and Walnut Street on the south.

The Fred J. Galehouse Building houses the administrative offices, business office, classrooms, chemical and criminalistics laboratories, and part of the shop areas. The M.J. McLeod Building houses the Student Development office, Learning Resource Center (library), laboratories, classrooms, cafeteria, and the student lounge area. Two additional shop buildings (the Richard L. Burnett and the William T. Emmart) are



## CAPE FEAR COMMUNITY COLLEGE

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located at the water's edge, and a pier extends out to the deep-water channel to provide mooring for the school's training vessels. The buildings are of all-masonry construction and designed especially for trade and technical programs. All classrooms and offices are air-conditioned for year-round comfort.

### **Shops and Equipment**

The shops and laboratory areas were carefully planned to provide large, well-ventilated, and industry-type training facilities.

Equipment for all shops, laboratories, test areas, drafting rooms, and for the training ships is selected to conform with the current tools and devices of industry. Students will find that ample opportunity is provided in all trade and technical curricula for skill-building practice in using modern, industrial tools and machines. Classrooms for study of the academic related subjects are conveniently located; a well-stocked technical library is available both day and night.

### **Areas of Study**

Curricula which the College is presently authorized to offer include the following:

#### **Technical Curricula:**

(See pages 43 to 89 for course descriptions)

- Accounting
- Administrative Office Technology
- Associate Degree Nursing
- Automotive Technology
- Basic Law Enforcement Training (Certificate Program)
- Business Administration
- Chemical Technology
- Computer Engineering Technology
- Criminal Justice - Protective Service Technology
- Drafting and Design Engineering Technology
- Early Childhood Associate
- Electronics Engineering Technology
- General Occupational Technology
- General Technology Curriculum Core
- Health Information Technology
- Hotel and Restaurant Management
- Instrumentation Technology
- Machining Technology
- Manufacturing Engineering Technology
- Marine Technology
- Medical Laboratory Technology
- Microcomputer Systems Technology (Certificate Program)
- Paralegal Technology
- Real Estate (Technical Specialty) (Certificate Program)
- Real Estate Appraisal (Certificate Program)

(Students graduating from these programs are awarded the Associate in Applied Science Degree.)

#### **Vocational Curricula:**

(See pages 98 to 111 for course descriptions)

- Air Conditioning, Heating & Refrigeration
- Boatbuilding
- Dental Assisting
- Industrial Electricity
- Industrial Mechanics
- Light Construction
- Marine and Diesel Mechanics
- Phlebotomy (Certificate Program)
- Practical Nursing
- Welding

(A diploma is earned by graduates of these vocational programs.)

#### **College Transfer**

(See pages 43 to 89 for course descriptions)

Students who graduate from the College Transfer Curriculum are awarded the Associate in Arts degree.

#### **General Education**

(See pages 43 to 89 for course descriptions)

Students who graduate from the General Education Curriculum are awarded the Associate in General Education degree.

## ***Admissions***

### **Admissions Statement**

CFCC operates under an "open door" policy. This means that the College offers instruction to all adults. So if you are 18 years of age or older, or if you have a high school degree or equivalent, and can benefit from courses and programs offered by our College, WE WELCOME YOU.

While a high school education or recognized equivalency is desirable for admission to vocational programs, students who do not meet this requirement may be admitted to vocational, diploma programs. Exceptions are students entering the Dental Assisting, Phlebotomy and Practical Nursing programs; these students must hold high school diplomas or a recognized equivalency.

Students who do not wish to enter degree or diploma programs or are high school students who have special concurrent enrollment permission may enter CFCC as a "special credit" or "T-301" (technical)/"V-301" (vocational) student. Students may be admitted as special credit students; however, these students may only carry a part-time course load. Also, special credit students must have their registration cards approved by a counselor. (Special credit students may not register for classes until class space is open to the general public.) Admission as a special credit student does not constitute admission to any curriculum program. Special credit students may attempt



no more than 27 credit hours without meeting admissions requirements. Students who exceed this number will not be permitted to register until admissions requirements are met. Also, students who enter a curriculum program from special credit status as well as students who receive veterans benefits or financial aid must meet all admissions requirements prior to time of registration. Exceptions are programs which do not culminate in a degree or diploma. Admissions requirements do not apply to these programs.

## Admissions Process

### 1. Application

An application for admission must be submitted prior to registration.

### 2. Official high school or General Educational Development (GED) Transcript.

An official high school or GED transcript must be sent directly to CFCC from the high school last attended, school which proctored the GED, or state-level GED agency.

### 3. Official College Transcript(s)

Official college transcripts must be sent directly to CFCC from the college(s) last attended.

### 4. Assessment Evaluation

Students are required to take the assessment evaluation prior to enrollment. (There is no charge for the evaluation.) Assessment evaluation results are used to determine whether students need to enhance their skills in academic areas. Evaluation scheduling is coordinated through the Admissions office.

### 5. Medical Examination

A medical history is required and some programs will require a physicians statement. Appropriate medical forms are available in the Admissions office.

### Selective Admission/Health Service Programs

Certain CFCC academic programs have additional entrance requirements. Students applying for admission to those selective admission programs must meet general college admission requirements as well as specific program requirements.

Each of the selective admission programs requires that applicants be a high school graduate or have a GED, meet the minimum placement test scores required for the specific degree program and complete the program application process by the deadline established for that particular program.

Selective admission programs include: Associate Degree Nursing, Dental Assisting, Health Information Technology, Phlebotomy, Practical Nursing, and other programs through the Southeastern Allied Health Consortium.

Students may visit the Admissions Office for specific program requirements and applications.

## Provisional Admission

Students whose official transcripts have not been received by the Admissions Office at the time of registration may be admitted provisionally. All admissions requirements must be met within thirty (30) calendar days from the first day of the quarter. Those students who do not meet admissions requirements within thirty (30) calendar days may be dropped from courses and will not be allowed to register until all admission requirements are met. Provisionally admitted students are required to take the ASSET assessment prior to registration.

## Admission of Out-of-State Students

Out-of-state students are admitted under the same admission standards as residents of North Carolina. Residency classification for out-of-state students will be determined by the laws of the State of North Carolina. At the time of admission, the Director of Admissions will determine the residency status of the applicant based on the information supplied on the application and any other data deemed appropriate by the Director of Admissions. If the applicant is not satisfied with the residency classification assigned by the Director of Admissions, an appropriate form for appeal is available in the Office of Student Development, but must be filed within ten (10) days following the first notification of residency status. Applicants wishing additional information about the laws of North Carolina governing residency classification for students should make inquiry to the Office of Student Development, where copies of the law are maintained.

## Admission of International Students

The school is authorized under Federal law to admit non-immigrant alien students.

# Services To Students

## Counseling Services

Qualified counselors are available to assist students in selecting an appropriate course of study, to provide occupational and educational information, and to discuss scholastic or personal problems which may arise.

## Career and Testing Services

The major function of Career and Testing Services is to provide career planning, job information, and testing to students and graduates.

### Career Planning

This service offers special help in the development of job search techniques; information about present and future employment trends; statistical information about graduates' employment; business/industry literature and directories; and administration and interpretation of NCCAREERS, a computerized career decision-making program.

# CAPE FEAR COMMUNITY COLLEGE

## Job Information

The job information function of this office is to assist students and graduates in securing job positions in their chosen fields; also the office assists students in finding part-time employment while they are in school. Career and Testing Service coordinates on-campus company recruitment of students.

## Assessment Evaluation

The purpose of CFCC's assessment evaluation is to provide the school's advisors and counselors with information about applicants' reading, writing, and math skills. These scores, along with other admissions information, enable counselors to assist students in deciding on courses and/or programs of study. For applicants who have not yet achieved college level skills in reading, writing, and mathematics, the College offers developmental courses as well as the services of the Center for Academic Enhancement. Through assessment evaluation, students will need to demonstrate proficiencies in these areas prior to being admitted to some curricula. CFCC assessment evaluations are given frequently during the year. Times for evaluation vary in order to meet the needs of students.

## Student Financial Aid

For those who qualify, financial aid can assist with one's educational expenses. The Financial Aid Office at CFCC administers different aid programs designed to assist students. Available programs include: grants and scholarships, part-time work, and low-interest educational loans. Financial Aid is not intended to meet the entire cost of one's education at college. Financial assistance aids the student and parents in defraying the cost of one's education if financial need is shown.

It is required that each applicant for financial assistance complete and submit a free application for federal student aid to the Pell Grant Processing Center. The financial aid form can be obtained in the Financial Aid Office.

Also, it is required that each aid applicant complete and submit the College Application for Financial Aid to the Office of Financial Aid and be fully accepted to CFCC by the Admissions Office before any aid can be granted.

Financial Aid recipients are required to maintain satisfactory progress toward completing a degree or diploma. Students will be given a copy of the policy which governs "satisfactory progress" at the time the financial aid award is made. Questions regarding financial aid should be made to the Financial Aid Office.

In addition to the Financial Aid programs listed below, there are numerous scholarships and a limited number of loans available to eligible students.

### Pell Grants

This award is granted through the Federal Government for students in need of financial assistance as evidenced by needs analysis set by Federal standards. It does not have to be repaid. You must apply each year.

## Supplemental Educational Opportunity Grants (SEOG)

The SEOG is awarded by the College to students who have demonstrated financial need. It does not have to be repaid. In order to be considered, a Financial Aid form must be submitted to College Scholarship Service for needs analysis. A College application for aid must also be filed in the Financial Aid Office.

## North Carolina Student Incentive Grant Program (NCSIG)

Funds are provided by the North Carolina Education Assistance Authority to help needy students obtain their educational goal. Eligibility requirements are as follows: (1) must be a legal resident of North Carolina, (2) demonstrate substantial financial need, (3) be enrolled as a full time student, and (4) maintain satisfactory progress.

## College Work Study

The College participates in the College Work Study Program, which provides the student with an opportunity to earn a portion of his/her college expenses by working while in school during the regular academic year. Those interested in this program should contact the Financial Aid Office located in the Student Development Department..

## Vocational Rehabilitation

This is a program operated through the Division of Vocational Rehabilitation in cooperation with the North Carolina Department of Administration. The Division finances such services as are necessary to enable a physically or mentally employment-handicapped person to become self supporting. If a prospective student has a physical disability or is limited in his/her activity because of a disability, he/she should contact the nearest Division of Vocational Rehabilitation Office. The Division Office for North Carolina is located on 709 Market Street, Wilmington, NC.

## Veterans Educational Benefits

This program assists veterans as well as widows and/or children of eligible deceased or disabled veterans.

The educational benefits available under the G.I Bill are administered by the Veterans Administration which also is the final authority for determining eligibility. These benefits are not only available to eligible veterans, but also the spouses and children of certain categories of living and deceased veterans, and to certain active duty military personnel, reservists and members of the National Guards.

Prospective students who believe they may be eligible for veterans benefits should contact the Veterans Affairs Office at the school for the address of the nearest Veterans Administration Office.

## Freshman Orientation

Freshman Orientation is provided for full time students who are entering for the first time. Orientation informs the student about the academic and social policies of the College and acquaints him or her with the LRC and other facilities. Upper-



classmen assist in orientation and help answer questions about the College's policies and procedures.

### **The Library/Learning Resource Center (LRC)**

The LRC is located on the sixth floor of the M.J. McLeod Building. It currently has 27,000 books in the open-stack collection and subscribes to more than 608 magazines and newspapers. Other materials available for patron use include 7,000 rolls of microfilms of back issues of magazines and genealogical materials; approximately 2,000 out-of-print books in microfiche format and a collection of video tapes and compact discs. Typewriters, calculators, photocopy facilities, microfiche reader/printer are also available for patron use.

While the activities and materials collections of the LRC, for the most part are related to the programs of instruction offered and exist primarily for the students, faculty, and staff of the College. All adult residents of the area, particularly industrial employees, may utilize the LRC.

### **The Audio Visual Service Center**

The LRC Audio Visual Service Center (AVSC) is located on the fifth floor, Room S-513, of the M.J. McLeod building. Currently the College maintains more than 2,975 units of instructional media and over 615 items of audio-visual equipment which are available for use by the faculty.

The major purpose of the AVSC is to support the educational efforts of the college. A Faculty Self-Help Center is available for media production by instructors. Students may request assistance through their classroom instructor.

### **Health Services**

The following health services are provided through the Office of Student Development: (1) Minor first aid is available on campus. (2) Illness and injury that cannot be taken care of by individuals on campus will be referred to community health facilities. (3) A drug abuse prevention program is sponsored by the school which includes distribution of available literature, providing audio visual materials, making available through the LRC a limited number of current books on the subject, and a counseling service that refers students to local health professionals trained in the area of substance abuse. In case of illness or injury requiring transportation, the Student Development Office should be contacted immediately.

### **Student Activities**

Extracurricular activities are a very important part of the total educational program. Accordingly, CFCC has designed procedures for establishing clubs that are officially sanctioned by the school. These procedures may be found in the *Student Handbook*.

Intercollegiate activities depend on available sport facilities and student interest. From year to year, intercollegiate activities may include basketball, softball, golf, tennis, golf, soccer

and volleyball. Intramural activities offered by the College may include volleyball, chess, table tennis, and billiards.

The Student Government Association (SGA) is a very active organization at this school. The voice of the student body paves the way for good lines of communication between the students and the administration.

Many students donate their time and energies to projects under the guidance of instructors and community leaders by participating in some type of service club.

### **Developmental Studies**

It is not uncommon for a student to enter college who, for some reason, is deficient in the basic skills of reading, English, and/or mathematics. Recognizing this and being committed to making every opportunity available for students to help ensure their success, the school established a Developmental Studies program. This program is designed to help students gain the necessary skills in reading, English, and/or mathematics that will allow them to enter the curriculum program of their choice. Successfully completing these developmental courses will help ensure that the student has the basic skills in reading, English, and/or mathematics to function at the required entry level. These courses are required for those students who have been identified by the Admissions Office as needing enhancement in reading, English, or mathematics, or all.

Developmental courses earn credit; however, such credit does not apply toward the required hours for receiving a degree or certificate. Developmental courses are graded as "S", Satisfactory, or "U", Unsatisfactory. A satisfactory "S" grade is required in these course offerings before an individual will be allowed to enter the math and/or English sequence for which the developmental course is required. (See Course Descriptions for details.)

### **Cooperative Education**

Cape Fear Community College offers Cooperative Education in its Associate Degree programs. Co-op allows qualified students the opportunity to extend their classroom instruction to a viable work experience. Qualifying work experience must be related to the student's educational goals. Participating students receive college credits for the work experience and may use this as an elective.

To determine if you qualify or to find out more about Co-op, see your advisor.

### **Alumni**

The purpose of the Alumni Association is to provide for the continued growth and development of the College and to foster interest and fellowship among the alumni. Membership is open to anyone who has attended CFCC.



# *Student Expectations, Rights and Responsibilities*

## **Student Educational Records**

CFCC has established guidelines and procedures to ensure the confidentiality of students' education records as outlined in the Family Educational Rights and Privacy Act. See the *Student Handbook* for specific information regarding the maintenance and release of educational records.

## **Transcript of Records**

Upon request of the student, a transcript of credits earned at Cape Fear Community College will be sent to other schools and/or industry. Requests should be made in writing to the Registrar's Office.

## **Dress**

Where special dress or safety devices are required by the College, Department of Community Colleges regulations, or public law, the student will be expected to conform. Students are expected to maintain good personal grooming consistent with the ordinary requirements of industry.

## **Conduct**

It is expected that at all times the student will conduct himself/herself as a responsible adult. Participation in any activity which, in the opinion of the administration, disrupts the educational process or functioning of the College may result in disciplinary action. Specific violations of conduct include, but are not limited to the following:

- a. destruction of school property
- b. stealing
- c. cheating
- d. gambling
- e. use of profane language
- f. engaging in personal combat
- g. possess or carry, whether openly or concealed, any weapon on campus; the only exception to this directive is in the case where training or job requirements of the students or employee requires that such be carried
- h. possession and/or use of alcoholic beverages
- i. possession and/or use of any drug as defined under the North Carolina Controlled Substance Act, G.S. 89-90 through G.S. 90-94.

Violation of these rules of conduct will not be tolerated in or on any part of the campus, its satellites, equipment it operates, or wherever its employees or students are required to be while performing their duties as students or employees. Any violation of these standards of behavior may result in dismissal from the College.

Additional classroom rules will be designated by instructors or supervisors and must be followed by all.

## **Conduct Probation and Suspension**

Any student whose conduct becomes unsatisfactory may be placed on conduct probation; however, a student is subject to immediate suspension if deemed necessary by the Dean of Student Development. Any misconduct after a person is placed on conduct probation will result in prompt suspension.

## **Weapons on Campus**

It is unlawful for any person to possess or carry, openly or concealed, any weapon on campus. The only exception made to this directive is in the case where training or job requirements of the student or employee requires that such a weapon be carried.

## **Sexual Harassment**

Discriminatory personal conduct, including sexual harassment toward any member of the College, is a violation of both State and Federal law and school policy and cannot be tolerated in the College community.

All members of this school community are expected and instructed to conduct themselves in such a way as to contribute to an atmosphere free of sexual harassment. Sexual harassment of any employee or student by any other employee or student is a violation of the policy of this school and will not be tolerated.

Requests for sexual favors and other unwelcomed verbal or physical conduct of a sexual nature by any employee or student constitutes sexual harassment when:

- submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment, academic or student status, or
- submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting that individual, or
- such conduct has the purpose or effect of interfering with an individual's performance or creating an intimidating, hostile, or offensive environment in the work place or the classroom.

Any student who believes that he or she has been subjected to sexual harassment in violation of this policy should make a confidential complaint to the Dean of Student Development.

## **Crime Awareness and Campus Security Policy**

I. Cape Fear Community College adheres to the following Crime Awareness and Campus Security Policy.

A. In case of an accident, illness, criminal actions, and other emergencies, the Student Development Department must be notified immediately. (If any of the above situations occur at any campus site (example: Pender County Satellite) the appropriate Director of that location must be notified).

B. The Chief Fiscal Officer or the Director is responsible for security and access to all campus facilities.

C. Campus law enforcement is handled by a local security agency after 5:00 PM. Enforcement before 5:00 PM is handled by appropriate Deans and Directors. When further action is necessary, they in turn report to local city police or county law enforcement.

D. Violations involving the possession, use, and sale of alcoholic beverages, possession and/or use of any drug as defined under the N.C. Controlled Substance Act will not be tolerated in or on any part of the campus, its satellites, equipment it operates, or wherever its employees or students are required to be while performing their duties as students or employees. Any violation of these standards of behavior may result in dismissal from the college.

E. All incidents (crime and security) must be reported to the Dean of Students (day) or Evening Administrator (night) and or security campus security guards.

F. All incidents (crime and security) must be reported on the appropriate form and turned in to the Dean of Student Development.

## II. Security Operations

A. Cape Fear Community College (CFCC) has a contract with a local, professional security firm to provide security on our Wilmington campus after 5:00 PM each weekday and all day on Saturdays. Security services are also provided anytime the school is closed but classes are being held. Two guards are assigned to the downtown campus and one guard is assigned at Roland Grise Middle School when Literacy classes are being held there. At the downtown campus, one guard is assigned to the "A" Building, "W" Building and rear parking lot. The other guard is assigned to the "S" Building, Front Street area, and the CP&L parking lot. The E&I Building is patrolled now and the ADN Building will be patrolled if classes are ever held at night.

B. The guards have portable radios and are constantly patrolling. Should any "event" happen, the guards are to contact the City of Wilmington Police (station is one-half block away) and then try to control the "event" until police arrive. Any student requesting a security escort to his/her car at night is provided with an escort. Daytime security is the responsibility of the daytime staff. "Events" are reported to the appropriate dean after the situation is under control.

III. Information concerning crime awareness and campus security procedures and practices are disseminated to students and employees through the following:

1. Faculty and staff handouts.
2. *Student Handbook*.
3. Catalog.
4. Orientation.
5. Handouts.

IV. Information data on crime and security violations will be collected starting August 1, 1991. Results of data will be reported and available for distribution to interested parties beginning September 1, 1992.

## Grievance Procedure

If any student or prospective student feels that he or she has been discriminated against or denied service on the basis of race, color, national origin, religion, or sex, he or she should report such to the Dean of Student Development.

If any student or prospective student feels that he or she has been discriminated against or denied services on the basis of his/her handicap, he or she should report such to the Dean of Student Development.

## Right of Appeal

Any student who is dismissed from school for academic or disciplinary reasons may have his or her case reviewed by requesting such through the Dean of Student Development, who, in turn, will bring his or her case before the Admissions and Student Development Advisory Committee. The appeal may be carried to the Board of Trustees at the student's request.

# Expenses

## Tuition

Tuition is established by the North Carolina State Legislature and is subject to change without prior notification; however, the tuition is likely to change annually, which may be modest. Current tuition rates for curriculum courses may be found in the current schedule of classes.

If tuition is a major factor in the student's determination to attend CFCC, please contact the Director of Financial Aid as soon as possible.

## Personnel in the Armed Services

Any active duty member of the armed services who qualifies for admission shall be charged the out-of-state rate but will pay the in-state rate with the difference being waived.

Any dependent relative of a member of the armed services who is abiding in this State incident to active military duty while sharing the abode of that member shall be eligible to be charged the in-state tuition rate.

## Other Costs

Books and supplies are purchased by students as they are needed. These are available in the CFCC bookstore, which is located on campus.

A non-refundable activity fee is charged to all curriculum students for the Fall, Winter, and Spring Quarters. This fee is paid at the following rate: \$1.00 for every two (2) quarter hours of credit up to a maximum of twelve (12) quarter hours. The



maximum fee charged is \$6.00 per quarter.

All students who work in laboratories or shops are required to maintain accident insurance; insurance may be purchased annually or quarterly at the time of registration. All insurance expires on August 31 of each school year.

Parking permits may be purchased in the Business Office at the time of the student's initial registration. Permits are valid through August of the current school year.

### Payments

All tuition and fee charges are due and payable on the day of registration. Any deferred payments or exceptions to rules on financial affairs must be approved by the Chief Fiscal Officer.

Students will not be permitted to graduate, nor will a transcript be issued until all financial obligations to the school are satisfied.

### Refunds

A pre-registered curriculum student who officially withdraws from any/or all classes prior to the first day of the College's academic quarter will be eligible for 100 percent tuition refund.

A 75 percent refund will be made if the student officially withdraws during the period between the first day and the 20 percent point of the quarter. Refunds must be requested in writing.

Request for refunds will not be considered after the 20 percent point.

## *Academic Information and Requirements*

### Proficiency Examination

Credit by proficiency examination may be given for a course. Eligibility to take a proficiency examination may be based on high achievement in secondary schools, post secondary schools, or experience. Arrangements for examination should be made with the major subject instructor or the department chair.

### Advanced Placement Program

An entering first-year student may receive quarter hour credits based on Advanced Placement Examination of the College Entrance Examination Board (CEEB). These examinations are taken prior to the student's high school graduation. Information on this examination program may be obtained from the high school counselor.

High School seniors who take Advanced Placement Examinations should have test scores sent to the Admissions Office, CFCC, for evaluation concerning placement and credit. By scoring 3 or higher on the CEEB Advanced Placement Examination, students will be awarded credit for appropriate courses.

### CLEP Examinations

Students who are talented and well-prepared may receive credit at CFCC for achieving acceptable scores on the CLEP examinations, which are 90-minute, timed comprehensive tests. For most examinations, specific course credit is awarded; for some examinations, elective credit is awarded.

### Quarter System

The school year is divided into four quarters. Credits earned are in quarter hours. See course description section for number of credits required for graduation in each program.

### Course Load

A student who carries a minimum of 12 quarter hours is considered a full-time student. Students generally carry 14-18 quarter hours. A student may carry a maximum of 24 quarter hours credit. Any exception to this rule must be approved by the Dean of Student Development.

### Registration

Students who have been admitted will register on dates set by the school. Students will complete their class schedules and pay their fees at that time.

### Drop/Add - Late Registration

Students will be allowed to drop or add a class or register during the first three (3) days of each quarter.

### Auditing Courses

Students who wish to audit courses must register for the audit by following the regular registration procedures and stating in writing on a Registration Card or Drop/Add form which course(s) they are auditing. Auditing students receive no credit and are not required to participate in class discussion or take tests. The fees for audit courses are the same as those taken for credit. Changes from audit to credit or credit to audit may only be done during registration or drop/add periods.

### Withdrawal

Students desiring to withdraw from school must contact the Admissions Office to obtain the necessary forms and procedures for official withdrawal. A student who fails to withdraw officially will receive a grade of "NC" (No Credit).

Students who withdraw from a course(s) within the first 30% of class hours will receive a grade of "W" which will not be computed in the GPA (Grade Point Average). Students who withdraw from a course(s) after this period must receive a grade of "WP" (Withdraw Passing) or "WF" (Withdraw Failing). WP's will not be computed in the GPA whereas WF's will be computed as a failing grade.



Students who withdraw after the eighth week of classes must obtain permission in writing from the Dean of Student Development and the instructor, unless the student is completely withdrawing from all classes.

## Change of Program

Students who desire to change from one program to another must submit their request to the Admissions Office. Such requests will be carefully reviewed and students will be notified by the Admissions Office of its decision. In cases where students are permitted to change programs, prior satisfactory credits earned may be applied to the requirements for the new program where applicable.

## Attendance

The nature of the programs for students is such that it is necessary that students be in regular attendance to obtain maximum benefit from their courses. Students should aspire to a perfect attendance record at all times.

Standards of attendance must be established to provide student accountability required by various agencies associated with CFCC and to encourage student participation for the greatest possible benefit to the student. Students with special needs may receive reasonable accommodations in accordance with the guidelines established under the Americans with Disabilities Act.

In addition to any other requirements, students must be in attendance at least 80% of the clock-hours of a course to receive credit. Those who do not meet minimum attendance requirements will be given the grade of "NC" (No Credit), which will be computed in the student's grade point average as a failing grade.

Special note to Marine Technology students: Students in the Marine Technology curriculum are at times involved in cruises on the ship that might take place during a holiday or quarter break during which time students are normally off. When such occurs, students must participate in the cruise.

## Grading

Grading is done by the traditional method of "A" through "D", along with negative categories such as "F" (Failure), "WF" (Withdraw Failing) and "NC" (No Credit, Irregular Withdrawal). A full explanation of grading and grade point averaging is addressed in the *Student Handbook* which is given to all new students. Interested prospective students can obtain a copy of the *Student Handbook* by writing the Dean of Student Development.

## Quarter Hour Credit

Each course listed is followed by a notation on the number of quarter hours it carries. Normally, the number of quarter hours earned is based on the number of class, laboratory or shop hours spent under the supervisor or the course instructor per week for the quarter. Usually one quarter hour credit is given for each lecture hour of class per week, for each two hours of laboratory work per week, or for each three hours of shop or

manipulative laboratory per week. (A class hour is usually defined as 50 minutes of instruction.) Exceptions may be made in cases where specific classification is not feasible.

## Incomplete Grades

Incomplete will be given only when circumstances justify additional time to complete the course. An incomplete must be removed within six weeks following the first day of the next quarter it was received. Grades not made up within six weeks will be recorded as an "F."

## Course Repeat Policy

Courses that are repeated fall into three different categories:

1. Courses with an earned grade of "C or better may be repeated one time with special permission from a counselor.
2. Courses with an earned grade of "D", "F", "NC", or "WF" may be repeated a maximum of two times.
3. Audit courses may be repeated a maximum of two times.

When a course has been repeated, the higher grade will be used in GPA calculation. However, it is the responsibility of students who repeat classes to complete the necessary paperwork to have their academic transcripts evaluated. (The appropriate forms, "Request for Transcript Review," are available through the Admissions office.) Lower grades will be removed from GPA calculation; however, these grades will continue to appear on the academic transcript. Students may repeat a course a maximum of two times. When a course has been repeated twice, the highest of the three attempts will be used in GPA calculation.

Students who receive veterans benefits or financial aid should be advised that they may not receive funds for repeating courses which they have already passed.

Also, students who have received a degree from CFCC should be advised that the policy will not apply to courses which were taken to fulfill previous graduation requirements. A final student GPA (Grade Point Average) is computed at time of graduation, and this GPA may not be recalculated as courses are repeated.

## Grade Appeal Policy

The College grade appeal policy and related procedures can be found in the *Student Handbook*.

## President's List

Full time (12 or more quarter hours credit) students who have earned a grade point average of 4.00 will be placed on the President's List.

## Dean's List

Full time (12 or more quarter hours credit) students who have earned a grade point average of 3.50 with no grade lower than "C" will be placed on the Dean's List.

## Honors List

Part time (less than 12 quarter hours and at least six quarter hours) students who have earned a grade point average of 3.50 with no grade lower than a "C" will be placed on the Honors List.

## Honor Society

The establishment of a chapter of the Phi Theta Kappa Honor Society at Cape Fear Community College became a reality in the Fall Quarter of 1992. The eligibility requirements for full membership into the Alpha Chi Sigma Chapter of the Phi Theta Kappa Honor Society are that an individual must:

- Be a full-time student with a GPA of 3.5 or a part-time student with a GPA of 3.6.
- Be enrolled in a regionally accredited institution offering an associate degree program.
- Have completed at least 18 hours of course work leading to an associate degree at Cape Fear Community College.
- Enjoy full rights of citizenship.

## President's Award

Graduates who have achieved a 4.0 grade point average on all college work and at least half of their studies at CFCC are recognized by the College to receive the President's Award.

## Departmental Honors

Those members of the graduating class who have demonstrated outstanding leadership, attitude, and ability will be graduated with departmental honors. Since these are departmental awards, recipients are selected by lead instructors in cooperation with appropriate faculty members.

## Requirements for Graduation

To receive the Associate in Applied Science Degree, Associate in Arts Degree, the Associate in General Education Degree, or a Diploma, a student must maintain satisfactory grades in all laboratory and class subjects and an overall "C" average or a grade point average of at least 2.00. Degree recipients must earn a minimum of 32 quarter hours credit at Cape Fear Community College. Graduating students should file an application for graduation with the Registrar's Office during the Fall Quarter prior to Spring and Summer graduation. (See *Student Handbook* for full explanation of Grade Point Average.)

## Satisfactory Progress Standards

Each student is expected to make satisfactory progress toward obtaining a degree or diploma. At the end of each quarter, a student's Grade Point Average (GPA) is examined. The minimum cumulative GPA for remaining in good standing is as follows:

Attempted Credit		
Hours	Diploma	Degree
1 - 23	1.25	1.25
24 - 40	1.40	1.40
41 - 59	1.70	1.55
60 - 80	2.00	1.75
81 - 100		1.90
101 -		2.00

## Academic Probation and Suspension

A student who falls below the cumulative GPA requirements will be placed on academic probation for the following quarter. A student placed on academic probation will be notified in writing by the Admissions Office. A student on academic probation should schedule a conference with a counselor after he or she is notified about his or her probationary status. Any student on probation who fails to make satisfactory improvement during the following quarter may be suspended or advised to enter a more appropriate program. Upon request, a student suspended for academic reasons may be readmitted if, after a conference with a counselor, it is determined that the student would benefit from continued academic pursuit. Subsequent suspensions could result in the student not being readmitted again. However, it should be noted that some academic programs are more restrictive than others and may require approval of the department chair to be readmitted to a program following academic suspension.

## Special Note to Persons Attending Under the G.I. Bill

At any time a student, attending school under the G.I. Bill, fails to meet the required accumulative GPA, that student will be placed on academic probation for a period of one quarter. If, at the end of the probationary period, the cumulative GPA is below that required by the College, the Veterans Administration will be notified that the student has been "de-certified" for G.I. Bill payment purposes. If such a student continues to attend CFCC, the Veterans Administration will be notified when the student has achieved an acceptable cumulative GPA. Recertification by the V.A. for pay purposes will be retroactive to the starting date of the quarter in which satisfactory progress resumed.

## Cheating

The College cheating policy and related procedures can be found in the *Student Handbook*.



# COLLEGE TRANSFER & GENERAL EDUCATION

## CAPE FEAR COMMUNITY COLLEGE AUTHORIZED PROGRAMS

		CODE	DAY	EVENING	DEGREE CERTIFICATE
1	College Transfer	C011	*	*	AA
2	General Education	G020	*	*	AGE

AA - Associate in Arts degree    AGE - Associate in General Education degree

See pages 43 to 89 for course descriptions.

## College Transfer

The College Transfer program is designed to provide a broad background in the core courses of a liberal arts curriculum comprising the first two years of a four-year baccalaureate degree in major areas other than the fine arts or the sciences.

All college level courses that a student completes with a grade of "C" or better will generally transfer to most senior institutions. However, since requirements vary, it is the responsibility of each student to determine the specific requirements of the senior institution to which he or she plans to transfer. The student should also be advised that while individual courses may be considered for transfer credit, most institutions give preference to applicants who have completed the Associate in Arts degree.

A student is eligible to be granted the Associate in Arts degree upon completion of 96 quarter hours credits, including all required minimums outlined in the following listing. Only courses numbered 150 to 199 and 250 to 299 may be included for credit in this program.

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### Basic Studies Requirement      Required Quarter Hours Credit

<b>Communication</b> .....	<b>10</b>
ENG 151 English Composition I	5
ENG 152 English Composition II	5

### Fine Arts ..... 5

Select one fine arts course from the following:

ART 151	Art History and Appreciation	5
ART 152	Drawing Fundamentals	5
ART 153	Drawing II	5
ART 155	Beginning Painting	5
DRA 160	Introduction to Acting	5
DRA 175	Introduction to Film	5
MUS 150	Survey of Music Literature	5

### Humanities ..... 10

Select one humanities course from two of the following three areas:

1.	ENG 160	Introduction to Literature	5
	ENG 251	Great British Writers I	5
	ENG 252	Great British Writers II	5
	ENG 263	Great American Writers I	5
	ENG 264	Great American Writers II	5
	ENG 275	World Literature I	5
	ENG 276	World Literature II	5
2.	PHI 150	Introduction to Philosophy	5
	REL 150	Introduction to Religion	5
	REL 250	Religion in America	5
3.	FRE 150	French I	5
	FRE 151	French II	5
	SPA 150	Spanish I	5
	SPA 151	Spanish II	5

### Mathematics ..... 5

Select one course from the following:

MAT 150	College Mathematics I	5
MAT 160	College Algebra	5
MAT 190	Precalculus	5
MAT 250	Calculus I	5



# CAPE FEAR COMMUNITY COLLEGE

**Natural Sciences..... 12**  
Select one of the 12-quarter-hour credit sequences from one of the following areas:

## Life Sciences

1. BIO 150 General Biology I 6  
BIO 151 General Biology II 6
2. BIO 250 Anatomy and Physiology I 6  
BIO 251 Anatomy and Physiology II 6

## Physical Sciences

- PHY 150 College Physics I 4  
PHY 151 College Physics II 4  
PHY 152 College Physics III 4

## Physical Education ..... 3

- PED 150 Foundations of Physical Activity 3

## Social and Behavioral Sciences..... 15

Select one history course from the following:

- HIS 150 Western Civilization I 5  
HIS 151 Western Civilization II 5  
HIS 250 American History I 5  
HIS 251 American History II 5

Select one course from two of the following three areas:

1. POL 150 American National Government 5  
POL 250 American State and Local Government 5
2. PSY 150 Introduction to Psychology 5
3. SOC 150 Introduction to Sociology 5

## Total Basic Studies Requirement in Quarter Hours... 60

## Electives

Any of the courses listed above which are not used to meet the basic studies requirement may be used as electives. In addition, the following courses are approved electives.

- ANT 150 Introduction to Anthropology 5  
BIO 252 Microbiology 6  
CJC 150 Introduction to Criminal Justice 5  
CJC 250 Contemporary Issues in Criminal Justice 5  
DRA 150 Introduction to Theatre 5  
DRA 161 Play Production 5  
ECO 150 Principles of Microeconomics 5  
ECO 151 Principles of Macroeconomics 5  
EDU 250 Teacher, School, and Society 5  
ENG 250 Folklore 5  
FRE 152 French III 5  
GEO 150 Introduction to Physical Geography 6  
MAT 151 College Mathematics II 5  
MAT 161 College Trigonometry 5  
MAT 165 Introduction to Statistics 5  
MAT 251 Calculus II 5  
MUS 151 Introduction to Music History I 5  
MUS 152 Introduction to Music History II 5

- ORI 150 Seminar: Lifelong Learning 5  
PHO 150 Introduction to Photography 3  
PSY 250 Human Growth and Development 5  
PSY 298 Abnormal Psychology 5  
REL 198 World Religions 5  
SOC 250 Sociology of the Family 5  
SOC 260 Sociology of Deviant Behavior 3  
SOC 265 Sociology of Juvenile Delinquency 3  
SOC 270 Modern Social Problems 5  
SPA 160 Introductory Spanish 5  
SPH 150 Introduction to Speech 5  
SWK 150 Introduction to Social Work 5

## Total Electives Requirement in Quarter Hours ..... 36

## TOTAL REQUIREMENT IN QUARTER HOURS .... 96

Some four-year colleges require foreign language courses and additional humanities and mathematics courses for either junior standing or a baccalaureate degree. Also, some colleges may not accept some of the listed elective courses for transfer credit. For this reason, students planning to transfer should check the requirements and transfer policies of the four-year institution they wish to attend and select courses accordingly.

## General Education

### (AGE DEGREE)

The General Education program is designed for those students who desire a basic exposure to the areas of English, literature, fine arts and philosophy, social science, and science and mathematics and who would like to tailor their educational goals to personal interests rather than to specific professional requirements.

**IMPORTANT NOTICE:** In past years, General Education students, through special agreements, have been able to gain college credit for technical courses taken at CFCC. Starting in the Fall of 1992, a new curriculum, the College Transfer program, became the appropriate program in which to pursue an Associate in Arts degree. While a grace period will allow students already pursuing the General Education degree to gain college credits through the older special agreements, applicants interested in beginning a college transfer curriculum should select the College Transfer program.

The General Education program offers two alternatives for students: first, is the pursuit of an Associate in General Education degree (a two-year degree), which will take approximately six quarters; and second, to provide academic enrichment.

Individuals who want to explore a subject for their own enrichment and pleasure may enroll as special students (those who are not seeking a degree). Such students may elect to take as little as one course each quarter. Classes may be scheduled during the day or evening to minimize conflicts with work schedules so that employed persons may attend. Each General

# COLLEGE TRANSFER, GENERAL EDUCATION & TECHNICAL

Education program student will be offered special assistance in planning an education program and in relating the program to his/her personal goals.

A student is eligible for the Associate in General Education degree (AGE) upon the completion of 96 quarter hours credit. These hours must be comprised of courses from the following categories. Each category has a prescribed minimum number of credits, and there are a few required courses marked by an asterisk.

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## Credit

### Communication

(A minimum of ten (10) quarter hours credit)

ENG 101	Grammar	3
*ENG 151	Composition I	5
*ENG 152	Composition II	5
ENG 155	Technical and Business Writing	5
ORI 150	Seminar: Lifelong Learning	5

\*Required Course

NOTE: ENG 155 may be substituted for ENG 152 if a student does not plan to transfer to a four-year institution.

### Fine Arts

(A minimum of five (5) quarter hours credit)

ART 151	Art History and Appreciation	5
ART 152	Drawing Fundamentals	5
ART 153	Drawing II	5
ART 155	Beginning Painting	5
DRA 150	Introduction to Theatre	5
DRA 160	Introduction to Acting	5
DRA 161	Play Production	5
DRA 175	Introduction to Film	5
ENG 207	Poetry Writing	5
MUS 150	Survey of Music Literature	5
MUS 151	Introduction to Music History I	5
MUS 152	Introduction to Music History II	5
PHO 110	Introduction to Photography	2
PHO 150	Introduction to Photography	5

### Physical Education

(A minimum of three (3) quarter hours credit)

*PED 150	Foundations of Physical Activity	3
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\*Required Course

### Humanities

(A minimum of fifteen (15) quarter hours credit must be taken comprised of at least two areas.)

1.	ENG 160	Introduction to Literature	5
	ENG 250	Folklore	5
	ENG 251	Great British Writers I	5
	ENG 252	Great British Writers II	5
	ENG 263	Great American Writers I	5
	ENG 264	Great American Writers II	5
	ENG 275	World Literature I	5
	ENG 276	World Literature II	5
2.	ENG 114	Oral Communication	3
	FRE 150	French I	5
	FRE 151	French II	5
	FRE 152	French III	5
	SPA 150	Spanish I	5
	SPA 151	Spanish II	5
	SPA 160	Introductory Spanish	5
	SPH 150	Introduction to Speech	5
3.	PHI 150	Introduction to Philosophy	5
	REL 150	Introduction to Religion	5
	REL 198	World Religions	5
	REL 250	Religion in America	5

### Mathematics

(A minimum of five (5) quarter hours credit)

ACC 120	Accounting I	6
ACC 121	Accounting II	6
CAS 101	Computer Familiarization	3
CAS 106	Computer Applications	3
CSC 201	BASIC Language Programming I	3
CSC 210	BASIC Language Programming II	3
*MAT 121	Technical Mathematics	5
MAT 122	Technical Mathematics	5
MAT 123	Technical Mathematics	5
MAT 150	College Mathematics I	5
MAT 151	College Mathematics II	5
MAT 160	College Algebra	5
MAT 161	College Trigonometry	5
MAT 165	Introduction to Statistics	5
MAT 190	Precalculus	5
MAT 211	Basic Statistics	5
MAT 212	Industrial Statistics	4
MAT 250	Calculus I	5
MAT 251	Calculus II	5

\*Required Course

NOTE: MAT 150, 160, 190, or 250 may be substituted for MAT 121.

# CAPE FEAR COMMUNITY COLLEGE

## Natural Sciences

(A minimum of twelve (12) quarter hours credit must be taken from one life science and one physical science area, including one laboratory science course.)

## Life Sciences

BIO	101	Human Anatomy and Physiology I	5
BIO	107	Human Anatomy and Physiology II	5
BIO	150	General Biology I	6
BIO	151	General Biology II	6
BIO	250	Anatomy and Physiology I	6
BIO	251	Anatomy and Physiology II	6
BIO	252	Microbiology	6

## Physical Sciences

1.	CHM	101	Introduction to Chemistry	5
	CHM	114	Basic Chemical Concepts I	7
	CHM	115	Basic Chemical Concepts II	7
	CHM	118	Basic Chemistry	3
2.	GEL	101	Marine Geology	4
	GEL	102	Geology of the Oceans	4
	GEO	150	Introduction to Physical Geography	6
3.	PHY	100	Introductory Physics	5
	PHY	101	Physics: Properties of Matter	4
	PHY	102	Physics : Work, Energy and Power	4
	PHY	103	Physics: Electricity	4
	PHY	104	Physics: Light and Sound	4
	PHY	105	Physics: Heat and Fluids	4
	PHY	106	Applied Mechanics	4
	PHY	150	College Level Physics I	4
	PHY	151	College Level Physics II	4
	PHY	152	College Level Physics III	4

## Social and Behavioral Sciences

(A minimum of five (5) quarter hours credit)

ANT	150	Introduction to Anthropology	5
CJC	150	Introduction to Criminal Justice	5
CJC	250	Contemporary Issues in Criminal Justice	5
ECO	102	Economics I	3
ECO	104	Economics II	3
ECO	108	Consumer Economics	3
ECO	150	Principles of Microeconomics	5
ECO	151	Principles of Macroeconomics	5
EDU	205	Teacher, School, and Society	2
EDU	250	Teaching Methods	5
HIS	150	Western Civilization I	5
HIS	151	Western Civilization II	5
HIS	250	American History I	5
HIS	251	American History II	5
POL	150	American National Government	5
POL	250	American State and Local Government	5
PSY	102	Introduction to Psychology	3
PSY	150	Introduction to Psychology	5
PSY	250	Human Growth and Development	5
PSY	298	Abnormal Psychology	5
SOC	150	Introduction to Sociology	5
SOC	250	Sociology of the Family	5

SOC	260	Sociology of Deviant Behavior	3
SOC	265	Sociology of Juvenile Delinquency	3
SOC	270	Modern Social Problems	5
SWK	150	Introduction to Social Work	5

In addition to the courses already listed, any course numbered 150-199 or 250-299 may be selected as an elective for General Education.

Quarter Hours Credit Needed for the Associate in General Education Degree.

Required four courses (marked with asterisk)

Communication	10
Fine Arts	5
Humanities	15
Physical Education	3
Mathematics	5
Natural Sciences	12
Social and Behavioral Sciences	<u>5</u>

Sub Total 55

Student Selection 41

**Total for Associate in General Education Degree 96**



# TECHNICAL CURRICULA

Technicians are among the fastest growing occupational groups in the United States. In recent years, the needs of an expanding and increasingly technical economy have greatly intensified the demand not only for engineers and scientists, but also for the technical workers who assist them. Technicians are those workers whose jobs require both knowledge and use of scientific and mathematical theory, specialized education or training in some aspect of technology or science, and work, with scientists and engineers. Some jobs held by these technicians are supervisory and require both technical knowledge and the ability to supervise people.

In carrying out their assignment, engineering and science technicians frequently use complex electronic and mechanical instruments, experimental laboratory apparatus, and drafting instruments. These workers engage in virtually every aspect of engineering and scientific work. In research, development, and design work they conduct experiments or tests; set up, calibrate, and operate instruments; and make calculations. They also assist scientists and engineers in developing experimental equipment and models by making drawings and sketches and frequently do some design work.

Technicians also work in jobs related to production. They may aid in the various phases of production operations, such as working out specifications for materials and methods of manufacturing, devising tests to insure quality control of products, or making time-and-motion studies (timing and analyzing the worker's movements) designed to improve the efficiency of a particular operation. They may also perform liaison work between engineering and production or other departments.

Cape Fear Community College provides training in a number of areas which require training beyond the high school, but do not require four years of college preparation. Most of the technical programs are six quarters in length and are geared to train a person in specific technical areas. Students spend twenty to thirty hours per week in classroom and laboratory work; additional time will be needed for outside assignments.

The Associate in Applied Science degree is awarded to students who complete a technical program. To be eligible for the degree, a student must maintain satisfactory grades in all laboratory and class subjects and an overall grade point average of 2.00.

Credit hours granted in the various technical programs are not transferrable to other institutions except as an institution may determine that a particular course and credits are applicable to a curriculum offered by that school.

AUTHORIZED PROGRAMS		CODE	DAY	EVENING	DEGREE	CERTIFICATE
1	Accounting	T016	*	*	AAS	
2	Administrative Office Technology	T030	*	*	AAS	*
3	Associate Degree Nursing (Registered Nursing)	T059	*		AAS	
4	Automotive Technology	T176	*	*	AAS	
5	Basic Law Enforcement Training	T189	*			*
6	Business Administration	T018	*	*	AAS	
7	Chemical Technology	T037	*		AAS	
8	Computer Engineering Technology	T040	*	*	AAS	
9	Criminal Justice	T129	*	*	AAS	
10	Drafting and Design Engineering Technology	T043	*	*	AAS	
11	Early Childhood Associate	T073	*	*	AAS	
12	Electronics Engineering Technology	T045	*	*	AAS	
13	General Occupational Technology	T114		*	AAS	
14	General Technology Core	T201	*	*		*
15	Health Information Technology	T053	*	*	AAS	
16	Hotel and Restaurant Management	T025	*		AAS	
17	Instrumentation Technology	T048	*	*	AAS	
18	Machining Technology	T121	*	*	AAS	
19	Manufacturing Engineering Technology	T050	*		AAS	
20	Marine Technology	T085	*		AAS	
21	Medical Assisting	T058				
22	Medical Laboratory Technology	T110				
23	Microcomputer Systems Technology	T192	*	*	AAS	*
24	Paralegal Technology	T120	*	*	AAS	
25	Real Estate (Technical Specialty)	T166		*		*
26	Real Estate Appraisal	T224		*		*

AAS - Associate in Applied Science degree. Electives are to be chosen only from the technical section of the catalog. See pages 43 to 89 for course descriptions.

# Accounting

The purpose of the Accounting curriculum is to prepare the individual to enter the accounting profession through study of accounting principles, theories and practices with related study in law, finance, management and data processing operations.

The curriculum is designed to prepare the individual for entry-level accounting positions, such as junior accountant, bookkeeper, accounting clerk, cost clerk, payroll clerk, and related data processing occupations.

With experience and additional education, the individual will be able to advance to positions such as system accountant, cost accountant, budget accountant and property accountant.

## MAJOR COURSES

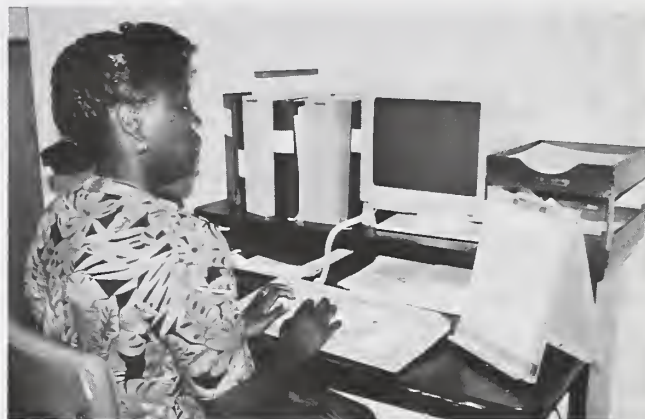
	Credit Hours
ACC 120 Accounting I	5
ACC 121 Accounting II	5
ACC 122 Accounting III	5
ACC 128 Computerized Accounting I	2
ACC 129 Taxes I	4
ACC 220 Intermediate Accounting I	4
ACC 221 Intermediate Accounting II	4
ACC 225 Cost Accounting I	4
ACC 226 Cost Accounting II	4
ACC 230 Taxes II	4
ACC 231 Auditing	4
BUS 123 Business Finance I	4
BUS 124 Business Finance II	4
BUS 127 Business Mathematics	4
BUS 135 Advanced Business Mathematics	4
	<u>61</u>

## RELATED

BUS 114 Business Statistics	3
BUS 115 Business Law I	5
BUS 235 Business Management	3
CAS 101 Computer Familiarization	3
CAS 109 Database Processing	4
CAS 125 Microcomputer Word Processing I	4
CAS 130 Spreadsheet Applications I	2
CAS 211 Spreadsheet Applications II	2
ECO 102 Economics I	3
ECO 104 Economics II	3
OSC 105 Keyboarding	4
	<u>36</u>

## GENERAL EDUCATION

ENG 151 English Composition I	5
ENG 114 Oral Communications	3
PSY 150 Introduction to Psychology	5
— — Humanities/Fine Arts Elective	5
	<u>18</u>



## ELECTIVES

— — Elective	<u>3</u>
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## WORK EXPERIENCE

COE 101 Cooperative Work Experience	1
COE 102 Cooperative Work Experience	1
OOE 103 Cooperative Work Experience	<u>1</u>
	3

## TOTAL CREDITS

118

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

## ACCOUNTING

The six-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>IV</b>
BUS 127	ACC 122
BUS 115	ACC 128
CAS 101	ACC 129
OSC 105	CAS 109
ENG 114	ECO 102

<b>II</b>	<b>V</b>
ACC 120	ACC 220
BUS 135	ACC 225
PSY 150	ACC 230
HUMANITIES/FINE	BUS 123
ARTS ELECTIVE	CAS 130
	ECO 104

<b>III</b>	<b>VI</b>
ACC 121	ACC 221
BUS 114	ACC 226
ENG 151	ACC 231
CAS 125	BUS 124
ELECTIVE	BUS 235
	CAS 211



# Administrative Office Technology

This curriculum prepares individuals to perform secretarial and administrative support duties in a variety of offices including those offices with computerized, automated functions.

Students in this curriculum study keyboarding and word/information processing to develop skills in the preparation of business correspondence, reports, statistical copy, manuscripts and business forms. Administrative support courses emphasize typical office tasks such as scheduling appointments, composing correspondence and performing reprographic duties. Training is also provided in analyzing and coordinating office duties and systems. Skills and knowledge are taught in the areas of electronic document storage and retrieval and computer software utilization.

Graduates of the program may be employed in offices in private business establishments involved in retailing, marketing, advertising, and manufacturing as well as offices in local, state, and federal government.

	Credit
<b>MAJOR COURSES</b>	
BUS 236 Human Resource Management	3
CAS 101 Computer Familiarization	3
CAS 109 Database Processing	4
CAS 130 Spreadsheet Applications I	2
OSC 200 Information Management	4
CAS 208 Desktop Publishing	3
CAS 211 Spreadsheet Applications II	2
CSC 105 Keyboarding	4
OSC 118 Document Production	4
OSC 213 Office Procedures	3
OSC 217 Comprehensive Speedwriting	5
CAS 125 Microcomputer Word Processing I	4
CAS 126 Microcomputer Word Processing II	4
OSC 119 Advanced Document Production	4
OSC 240 Comprehensive Machine Transcription	5
OSC 120 Administrative Office Applications I	2
OSC 121 Administrative Office Applications II	2
	58

<b>RELATED</b>	
ACC 120 Accounting I	5
ACC 121 Accounting II	5
ACC 129 Taxes I	4
BUS 127 Business Mathematics	4
BUS 115 Business Law I	5
BUS 135 Advanced Business Mathematics	4
ECO 102 Economics I	3
BUS 109 Professional Development	3
	33

## GENERAL EDUCATION

ENG 151	English Composition I	5
ENG 114	Oral Communications	3
PSY 150	Introduction to Psychology	5
— —	Humanities/Fine Arts Elective	<u>5</u>
		18

## ELECTIVES

— —	Elective	<u>3</u>
		3

## WORK EXPERIENCE

COE 101	Cooperative Work Experience	1
COE 102	Cooperative Work Experience	1
COE 103	Cooperative Work Experience	<u>1</u>
		3

## TOTAL CREDITS

112

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

## ADMINISTRATIVE OFFICE TECHNOLOGY

The six-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>IV</b>
BUS 115	ACC 129
BUS 127	CAS 109
CAS 101	CAS 125
ENG 114	ECO 102
OSC 105	OSC 240
<b>II</b>	<b>V</b>
ACC 120	CAS 130
BUS 135	OSC 120
BUS 236	OSC 126
OSC 118	OSC 200
PSY 150	OSC 217
<b>III</b>	<b>VI</b>
ACC 121	CAS 208
BUS 109	CAS 211
ENG 151	OSC 121
OSC 119	OSC 213
HUMANITIES/FINE	ELECTIVE
ARTS ELECTIVE	

# Associate Degree Nursing, Registered Nursing

The Associate Degree Nursing curriculum is designed to prepare graduates to integrate the principles and theories of nursing and the sciences in utilizing the nursing process in the practice of nursing. The practice of nursing by associate degree nursing graduates consists of assessing the patient's physical and mental health, including the patient's reaction to illness and treatment regimens; recording and reporting the results of the nursing assessment; planning, initiating, delivering, and evaluating appropriate nursing acts; teaching, delegating to or supervising other personnel in implementing the treatment regimen; collaborating with other health care providers in determining the appropriate health care for a patient; implementing the treatment and pharmaceutical regime prescribed by any person authorized by state law to prescribe such a regime; providing teaching and counseling about the patient's health care; reporting and recording the plan for care, nursing care given, and the patient's response to that care; and supervising, teaching and evaluating those who perform or are preparing to perform nursing functions.

Graduates are eligible to take the National Council Licensure Examination (NCLEX - RN) which is required for practice as a registered nurse.

Individuals desiring a career in registered nursing should take biology, algebra, and chemistry courses prior to entering the program.

**(This Program is Under Revision.)**

	Credit
<b>MAJOR COURSES</b>	
NUR 101 Fundamentals of Nursing	7
NUR 102 Common Stressors in Medical-Surgical Nursing	9.3
NUR 103 Medical-Surgical Nursing I	9.3
NUR 104 Maternal -Child Nursing	11.3
NUR 105 Issues and Trends	2
NUR 201 Psychiatric Nursing	8.3
NUR 202 Patient Care Management	1
NUR 203 Medical-Surgical Nursing II	11
NUR 204 Medical-Surgical Nursing III	11
	<u>70.2</u>

<b>RELATED COURSES</b>	
BIO 121 Anatomy and Physiology I	6
BIO 122 Anatomy and Physiology II	6
BIO 123 Microbiology	6
CAS 101B Computer Familiarization	2
PSY 250 Human Growth and Development	5
	<u>25</u>

<b>GENERAL EDUCATION (18-30)</b>	
ENG 151 English Composition I	5
ENG 152 English Composition II	5
PSY 150 Introduction to Psychology	5
— — Humanities/Social Science Elective	5
	<u>20</u>

NUR 120 Nursing Transition 8  
Required of LPN's prior to admission to ADN program.

<b>AUDIT COURSES</b>	
NUR- 101A Fundamentals of Nursing	7
NUR 102A Common Stressors in Medical-Surgical Nursing	6
NUR 103A Medical-Surgical Nursing I	6
NUR 104A Maternal-Child Nursing	8
NUR 201A Psychiatric Nursing	5
NUR 203A Medical-Surgical Nursing II	6

**TOTAL CREDITS 115.2**



**ASSOCIATE DEGREE NURSING**  
The seven-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>IV</b>
<b>BIO 121</b>	<b>NUR 104</b>
<b>NUR 101</b>	<b>NUR 105</b>
<b>PSY 150</b>	
<b>II</b>	<b>V</b>
<b>BIO 122</b>	<b>ENG 151</b>
<b>CAS 101B</b>	<b>NUR 201</b>
<b>NUR 102</b>	<b>NUR 202</b>
<b>III</b>	<b>VI</b>
<b>BIO 123</b>	<b>ENG 152</b>
<b>NUR 103</b>	<b>NUR 203</b>
<b>PSY 250</b>	
	<b>VII</b>
	<b>NUR 204</b>
	<b>HUMANITIES/</b>
	<b>SOCIAL SCIENCE</b>
	<b>ELECTIVE</b>



# Automotive Technology

Automotive Technology is designed to meet the need for preparing highly trained technicians to service and repair automobiles and light trucks equipped with highly technical electrical, electronics, and emission control systems. Emphasis is placed on the operation and servicing of the power train components, electrical systems, fuel systems, chassis and suspension and emission controls of gasoline and diesel engine vehicles. Upon completion of this curriculum, the person should have the theoretical knowledge and background to understand the systems of the newer model automobiles and should be prepared to work as a technician servicing automobiles and light duty trucks.

			Credit
<b>MAJOR COURSES</b>			
AUT 101	Engine Systems Operation		2
AUT 102	Heating & Air Conditioning		
	Diagnosis & Repair		4
AUT 103	Basic Automotive Electronics		3
AUT 104	Braking Systems		4
AUT 105	Suspension & Steering Systems		6
AUT 106	Electrical Fundamentals & Engine		
	Electrical Systems		5
AUT 107	Engine Performance I		6
AUT 108	Chassis Electrical Systems		6
AUT 109	Engine Performance II		5
AUT 110	Antilock Braking Systems		3
AUT 111	Wheel Alignment		2
AUT 201	Manual Drive Train and Axles		7
AUT 202	Automatic Transmissions/Transaxles		6
AUT 203	Engine & Chassis Electrical		
	Systems Application		6
AUT 204	Engine Diagnosis, Repair, & Rebuilding		6
AUT 205	Automotive Climate Control Systems		
	Diagnosis & Repair		4
AUT 206	Advanced Engine		
	Performance Applications		5
			<u>80</u>

## RELATED COURSES

MAT 101	Fundamentals of Math I	5
MAT 102	Fundamentals of Math II	5
CAS 201	Microcomputers for Industry	3
		<u>13</u>

## GENERAL EDUCATION

ENG 151	English Composition I	5
ENG 114	Oral Communications	3
— —	Humanities/Fine Arts Elective	5
PSY 150	Introduction to Psychology	5
		<u>18</u>

## ELECTIVES

— —	Elective	3
		<u>3</u>



## WORK EXPERIENCE

COE 101	Cooperative Work Experience	1
COE 102	Cooperative Work Experience	1
COE 103	Cooperative Work Experience	1
		<u>3</u>

## TOTAL CREDITS

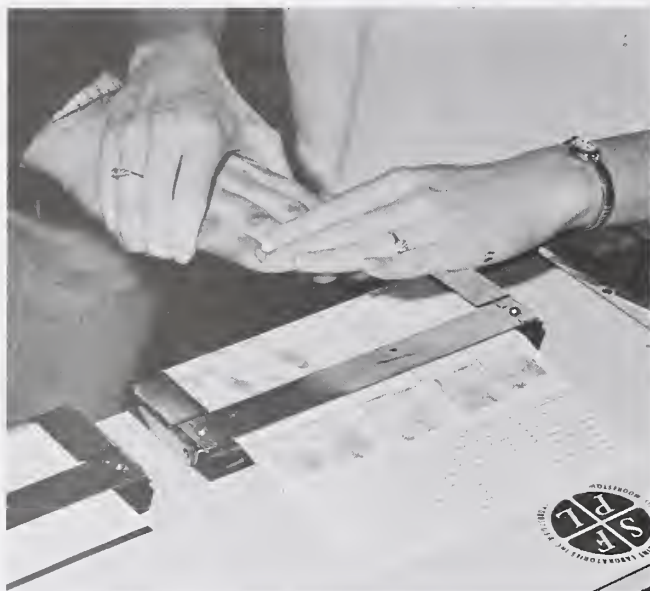
114

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

## AUTOMOTIVE TECHNOLOGY

The seven-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>IV</b>
AUT 101	AUT 109
AUT 102	AUT 110
AUT 103	CAS 201
AUT 104	HUMANITIES/FINE
MAT 101	ARTS ELECTIVE
	AUT 111
<b>II</b>	
AUT 105	AUT 201
AUT 106	AUT 202
MAT 102	PSY 150
<b>III</b>	<b>VI</b>
AUT 107	AUT 203
AUT 108	AUT 204
ENG 151	ENG 114
	<b>VII</b>
	AUT 205
	AUT 206
	ELECTIVE



## Basic Law Enforcement Training

The Basic Law Enforcement Training curriculum certificate program prepares individuals to take the Basic Training Law Enforcement Officer Certification Examination mandated by the North Carolina Criminal Justice Education and Training Standard Commission and/or it prepares individuals to take the Justice Officers Basic Training Certification Examination mandated by the North Carolina Sheriffs' Education and Training Standards Commission. Successful completion of this curriculum certificate program requires that the student satisfy the minimum requirements for certification by the Criminal Justice Commission and/or the Sheriffs' Commission. The student satisfactorily completing this program should possess at least the minimum degree of general attributes, knowledge, and skills to function as an inexperienced law enforcement officer.

Job opportunities are available with state, county, and municipal governments in North Carolina. In addition, knowledge, skills, and abilities acquired in this course of study qualify one for job opportunities with private enterprises in such areas as industrial, retail, and private security.

		Credit
MAJOR COURSES (23-26)		
CJC 130	Law Enforcement Training (Clock Hours 402)	20
CJC 131	Police Officer Training	2
CJC 132	Deputy Sheriff Training	2
CJC 133	Physical Training	2
		<u>26</u>
TOTAL CREDITS		26

## Business Administration

The Business Administration curriculum is designed to prepare an individual for entry into management positions.

The curriculum develops competencies in the application of management principles. Emphasis is placed on skill development in the areas of management functions, computer applications and analysis, critical thinking and decision-making techniques, marketing, finance, legal aspects of business, oral and written communications, and the utilization of human resources.

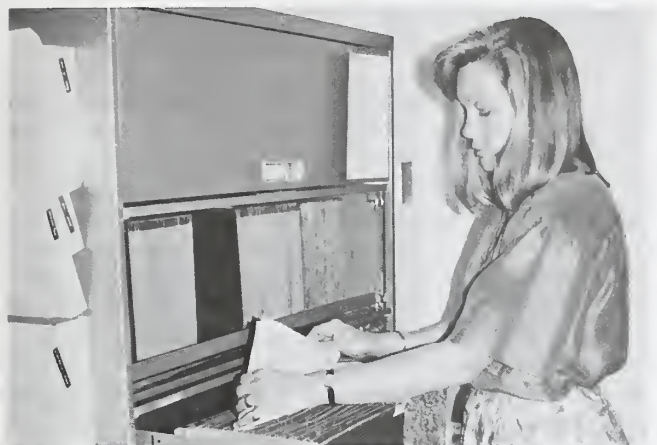
Through the development of management competencies, the graduate will be able to function as a contributing member of a management team.

		Credit
MAJOR COURSES		
ACC 120	Accounting I	5
ACC 121	Accounting II	5
ACC 122	Accounting III	5
ACC 128	Computerized Accounting I	2
ACC 129	Taxes I	4
ACC 230	Taxes II	4
BUS 115	Business Law	5
BUS 123	Business Finance I	4
BUS 124	Business Finance II	4
BUS 235	Business Management	3
ECO 102	Economics I	3
ECO 200	Managerial Economics	5
MKT 232	Sales Development	3
MKT 239	Marketing	5
		<u>57</u>

		Credit
RELATED COURSES		
BUS 127	Business Mathematics	4
BUS 135	Advanced Business Mathematics	4
CAS 101	Computer Familiarization	3
CAS 101A	Computer Familiarization	(1)
CAS 101B	Computer Familiarization	(2)
CAS 109	Data Base Processing	4
CAS 130	Spreadsheet Application I	2
CAS 211	Spreadsheet Application II	2
ECO 104	Economics II	3
OSC 105	Keyboarding	4
OSC 118	Document Production	4
CAS 125	Microcomputer Word Processing	4
		<u>34</u>

		Credit
GENERAL EDUCATION		
ENG 151	English Composition I	5
ENG 114	Oral Communications	3
PSY 150	Introduction to Psychology	5
— —	Humanities/Fine Arts Elective	5
		<u>18</u>



**ELECTIVES**

— — Elective	$\frac{3}{3}$
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**WORK EXPERIENCE**

COE 101 Cooperative Work Experience	1
COE 102 Cooperative Work Experience	1
COE 103 Cooperative Work Experience	$\frac{1}{3}$

**TOTAL CREDITS** 112

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

**BUSINESS ADMINISTRATION**

The six-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>IV</b>
BUS 127	ACC 122
BUS 115	ACC 128
CAS 101	ACC 129
OSC 105	CAS 109
ENG 114	ECO 102
	<b>ELECTIVE</b>
<b>II</b>	<b>V</b>
ACC 120	M KT 239
BUS 135	ACC 230
PSY 150	BUS 123
OSC 118	CAS 130
	ECO 104
<b>III</b>	<b>VI</b>
ACC 121	ECO 200
ENG 151	M KT 232
CAS 125	BUS 124
HUMANITIES/FINE	BUS 235
ARTS ELECTIVE	CAS 211

## Chemical Technology

The Chemical Technology curriculum prepares individuals as research assistants to chemists in the laboratory or as planning and production assistants to chemical engineers in actual industrial production.

Chemical technicians perform quantitative and qualitative chemical analysis of processes involved in research, production or monitoring situations. They test samples of raw materials to determine that they are within specification limits required, analyze samples of finished products to determine quality and prepare laboratory test reports, check chemical analysis with specifications and operate electronic laboratory equipment.

**MAJOR COURSES**

	Credit
CHM 114 Basic Chemical Concepts I	8
CHM 115 Basic Chemical Concepts II	8
CHM 116 Descriptive Chemistry	4
CHM 130 Organic Chemistry I	3
CHM 140 Unit Processes	8
CHM 150 Industrial Operations	5
CHM 231 Organic Chemistry II	6
CHM 232 Organic Chemistry III	5
CHM 233 Biochemical Concepts	4
CHM 243 Industrial Analysis I (Qualitative)	4
CHM 244 Industrial Analysis II (Quantitative)	5
CHM 245 Industrial Analysis III (Quantitative)	<u>6</u>
	66

**RELATED COURSES**

BIO 110 General Biology	4
BIO 215 Microbiology	5
SAF 120 First Aid	3
MAT 121 Technical Mathematics	5
MAT 122 Technical Mathematics	5
PHY 101 Physics: Properties of Matter	4
PHY 102 Physics: Work, Energy, and Power	4
PHY 103 Physics: Electricity	4
PHY 105 Physics: Heat and Fluids	<u>4</u>
	38

**GENERAL EDUCATION**

ENG 151 English Composition I	5
ENG 114 Oral Communication	3
PSY 150 Introduction to Psychology	5
HUM — Humanities/Fine Arts Elective	5
	18

**ELECTIVES**

— — Elective	$\frac{3}{3}$
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## CAPE FEAR COMMUNITY COLLEGE

### WORK EXPERIENCE

COE 101 Cooperative Work Experience	1
COE 102 Cooperative Work Experience	1
COE 103 Cooperative Work Experience	<u>1</u>
	3

**TOTAL CREDITS** 125

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the Co-Op Director and department chairperson.

### TRANSFER

Graduates (AAS) of the Chemical Technology program, who are otherwise accepted by the University of North Carolina at Wilmington (UNCW) for transfer, will be granted 20 semester hours chemistry credit toward a BA or BS chemistry degree.

Details and other information are available in the CFCC Admissions and Counseling Office.

### CHEMICAL TECHNOLOGY

The seven-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>IV</b>
CHM 114	CHM 140
MAT 121	CHM 150
PSY 150	PHY 101
<b>II</b>	<b>V</b>
CHM 115	CHM 231
ENG 151	CHM 243
MAT 122	ENG 114
TECHNICAL ELECTIVE	PHY 102
<b>III</b>	<b>VI</b>
BIO 110	BIO 215
CHM 116	CHM 232
CHM 130	CHM 244
SAF 120	PHY 103
HUMANITIES/FINE ARTS ELECTIVE	<b>VII</b>
	CHM 233
	CHM 245
	PHY 105

## Computer Engineering Technology

This program is intended to provide the skills required to install, service and maintain computers, microprocessors and computer controlled equipment and computer peripheral devices.

The curriculum provides training in both the hardware and software areas of the computer field.

A sequence of introductory hardware courses provides the student with a strong background in physics, technical mathematics, electricity, electronics, and digital logic circuits and concepts. Advanced course work provides a detailed study of: the logic of the central processing unit, the operation of integrated circuits in the central processing unit, the operation and use of integrated circuit memory devices and the interfacing of the central processing unit to memory devices. Additional studies cover interfacing the central processing unit to external devices using both serial and parallel data transfer, the operation of large scale integration programmable interface units and their interfacing with the central processing unit, and the operation of computer peripheral devices such as video displays, printers, floppy disk storage systems, magnetic tape units, keyboards and the techniques of converting signal between the analog and digital forms.

The programming course work provides a sequence of study stressing good program design techniques, structured programming and program documentation. Rather than being familiar with a large number of programming languages, the student is expected to learn well, a highly structured language, such as C, and an assembly language. The importance of assembly language to the understanding of the operation of the central processing unit and the related computer units is stressed. Computer operating system concepts are discussed to provide a unified view of the hardware and software aspects of the computer system.

MAJOR COURSES			Credit
ELC 107	Electricity I		6
ELC 108	Electricity II		5
ELC 109	Electricity III		5
ELN 102	Electronic Fabrication Techniques		1
ELN 106	Electronics I		5
ELN 107	Electronics II		5
ELN 108	Electronics III		5
ELN 121	Digital Electronics I		5
ELN 122	Digital Electronics II		3
ELN 240	Computer Project (Digital)		2
ELN 244	Computer Project (Software)		2
ELN 237	Introduction to Computer Systems		3
ELN 221	Microprocessors I		4
ELN 222	Microprocessors II		4
ELN 263	Computer Integrated Manufacturing		4
ELN 260	Data Communications		2
ELN 261	Local Area Networks I		4
ELN 262	Local Area Networks II		<u>4</u>
			69

### RELATED COURSES

DFT 100	Technical Drafting	2
CSC 250	C Language Programming I	3
CSC 251	C Language Programming II	3
CAS 106	Computer Applications	3



CHM 101	Introduction to Chemistry	5
MAT 121	Technical Mathematics	5
MAT 122	Technical Mathematics	5
MAT 123	Technical Mathematics	5
PHY 100	Introductory Physics	5
		<u>36</u>

**GENERAL EDUCATION**

ENG 151	English Composition I	5
SOC 150	Introduction to Sociology	5
ENG 114	Oral Communication	3
— —	Humanities/Fine Arts Elective	5
		<u>18</u>

**ELECTIVES**

— —	Elective	3
		<u>3</u>

**WORK EXPERIENCE**

COE 101	Cooperative Work Experience	1
COE 102	Cooperative Work Experience	1
COE 103	Cooperative Work Experience	1
		<u>3</u>

**TOTAL CREDITS****126**

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

**COMPUTER ENGINEERING TECHNOLOGY**

The seven-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>V</b>
ELC 107	CSC 250
ELN 102	ELN 122
CAS 106	ELN 240
MAT 121	ELN 237
	ELN 260
<b>II</b>	SOC 150
ELC 108	
ELN 106	<b>VI</b>
ENG 151	CSC 251
MAT 122	ELN 221
	ELN 244
<b>III</b>	ELN 261
ELC 109	ENG 114
ELN 107	
PHY 100	<b>VII</b>
MAT 123	ELN 222
	ELN 262
<b>IV</b>	ELN 263
DFT 100	HUMANITIES/FINE
ELN 108	ARTS ELECTIVE
ELN 121	
CHM 101	
ELECTIVE	

## ***Criminal Justice - Protective Services Technology***

The Criminal Justice Technology curriculum is designed so that it may be a multi-faceted program of study. It may consist of study options in corrections, law enforcement and security services.

The curriculum is designed with a core of courses to afford one the opportunity to acquire basic knowledge, skills and attitudes in the generally accepted subject areas associated with a two-year study of correctional services, law enforcement services and security services. It includes subjects such as interpersonal communications, law, psychology and sociology.

In addition to core subjects, the correctional services option provides an opportunity to study other generally accepted subjects indigenous to a two-year correctional services program such as confinement facility administration, correctional law, counseling, probation-parole services and rehabilitation options. Similarly, the law enforcement option provides an opportunity to study other generally accepted subjects included in a two-year law enforcement services program such as criminal behavior, criminal investigation, patrol operation, traffic management, and other aspects of law enforcement administration and operations. The security services option provides an opportunity to study other generally accepted subjects related to a two-year security services program such as accident prevention and safety management, common carrier protection, fire prevention, private security, industrial security, retail security, security systems and surveillance.

Job opportunities are available with federal, state, county and municipal governments. In addition, knowledge, skills and attitudes acquired in this course of study qualify one for job opportunities with private enterprise in such areas as industrial, retail and private security.

		Credit
<b>MAJOR COURSES</b>		
CJC 102	Introduction to Criminology	5
CJC 105	Firearms and Ballistics	4
CJC 150	Introduction to Criminal Justice	5
CJC 111	Introduction To Law Enforcement	5
CJC 113	Introduction to Courts	5
CJC 115	Criminal Law	5
CJC 160	Introduction to Corrections	5
CJC 206	Juvenile Justice System	5
CJC 220	Criminal Justice	
	Organization Management	5
CJC 250	Contemporary Issues	
	in Criminal Justice	5
PHO 150	Introduction to Photography	3
POL 250	American State and Local Government	5
LEX 205	Constitutional Law	5

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(Take 5 QHC from the following) 5

## CRIMINAL JUSTICE ELECTIVES

CJC 108	Research and Planning in Criminal Justice	5
CJC 126	Ethics and Community Relations	5
CJC 140	Fingerprint Identification	5
CJC 141	Handwriting Identification	5
CJC 205	Scientific Evidence	5
CJC 208	Arson Investigation	5
CJC 225	Security and Crime Prevention	5
CJC 245	Security Management	5
		<u>67</u>

## RELATED COURSES

OSC 105	Keyboarding	4
MAT 150	College Mathematics I	5
SOC 150	Introduction to Sociology	5
SOC 260	Sociology of Deviant Behavior	3
SOC 250	Sociology of the Family	5
BIO 150	General Biology I	6
		<u>28</u>

## GENERAL EDUCATION

ENG 151	English Composition I	5
ENG 152	English Composition II	5
SPH 150	Introduction to Speech	5
— —	Humanities/Fine Arts Elective	5
		<u>20</u>

## ELECTIVES

— —	Elective	5
		<u>5</u>

**TOTAL CREDITS** 120

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

## CRIMINAL JUSTICE-PROTECTIVE SERVICES TECHNOLOGY CORRECTIONS OPTION

		Credit
<b>MAJOR COURSES</b>		
CJC 102	Introduction to Criminology	5
CJC 105	Firearms and Ballistics	4
CJC 150	Introduction to Criminal Justice	5
CJC 111	Introduction To Law Enforcement	5
CJC 113	Introduction to Courts	5
CJC 115	Criminal Law	5
CJC 160	Introduction to Corrections	5
CJC 220	Criminal Justice Organization & Management	5
CJC 250	Contemporary Issues in Criminal Justice	5
PHO 150	Introduction to Photography	3
POL 250	American State and Local Government	5
LEX 205	Constitutional Law	5



(Take 10 QHC from the following) 10

## CRIMINAL JUSTICE ELECTIVES

CJC 108	Research & Planning in Criminal Justice	5
CJC 126	Ethics and Community Relations	5
CJC 140	Fingerprint Identification	5
CJC 141	Handwriting Identification	5
CJC 205	Scientific Evidence	5
CJC 206	Juvenile Justice System	5
CJC 208	Arson Investigation	5
CJC 225	Security and Crime Prevention	5
CJC 245	Security Management	5
		<u>67</u>

## RELATED COURSES

OSC 105	Keyboarding	4
MAT 150	College Mathematics I	5
SOC 150	Introduction to Sociology	5
SOC 260	Sociology of Deviant Behavior	3
SOC 265	Sociology of Juvenile Delinquency	3
SOC 250	Sociology of the Family	5
BIO 150	General Biology I	6
		<u>31</u>

## GENERAL EDUCATION

ENG 151	English Composition I	5
ENG 152	English Composition II	5
SPH 150	Introduction to Speech	5
— —	Humanities/Fine Arts Elective	5
		<u>20</u>

## ELECTIVES

— —	Elective	3
		<u>3</u>

**TOTAL CREDITS** 121

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.



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## CRIMINAL JUSTICE-PROTECTIVE SERVICES TECHNOLOGY LAW ENFORCEMENT OPTION

### MAJOR COURSES Credit

CJC 102	Introduction to Criminology	5
CJC 103	Introduction to Criminal Investigation	5
CJC 105	Firearms and Ballistics	4
CJC 150	Introduction to Criminal Justice	5
CJC 111	Introduction to Law Enforcement	5
CJC 113	Introduction to Courts	5
CJC 115	Criminal Law	5
CJC 160	Introduction to Corrections	5
CJC 211	Introduction to Criminalistics	5
CJC 222	Crime Scene Processing	5
CJC 250	Contemporary Issues in Criminal Justice	5
POL 250	American State and Local Government	5
PHO 150	Introduction to Photography	3

(Take 5 QHC from the following) 5

### CRIMINAL JUSTICE ELECTIVES

CJC 108	Research Planning in Criminal Justice	5
CJC 126	Ethics and Community Relations	5
CJC 140	Fingerprint Identification	5
CJC 141	Handwriting Identification	5
CJC 205	Scientific Evidence	5
CJC 208	Arson Investigation	5
CJC 225	Security and Crime Prevention	5
CJC 245	Security Management	5
		67

### RELATED COURSES (27-38)

OSC 105	Keyboarding	4
MAT 150	College Mathematics I	5
SOC 150	Introduction to Sociology	5
SOC 260	Sociology of Deviant Behavior	3
SOC 250	Sociology of the Family	5
BIO 150	General Biology I	6
		28

### GENERAL EDUCATION (18-29)

ENG 151	English Composition I	5
ENG 152	English Composition II	5
SPH 150	Introduction to Speech	5
— —	Humanities/Fine Arts Elective	5
		20

### ELECTIVES (0-11)

— —	Elective	5
		5

**TOTAL CREDITS** 120

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

## CRIMINAL JUSTICE - PROTECTIVE SERVICES TECHNOLOGY

The seven-quarter sequence of courses recommended for the full-time student is:

<b>I</b>		<b>III</b>
CJC 150		CJC 160
ENG 151		CJC 250
MAT 150		POL 250
OSC 105		SPH 150
<b>II</b>		<b>IV</b>
CJC 111		CJC 113
CJC 115		CJC 102
ENG 152		SOC 150
		PHO 150

## GENERAL CRIMINAL JUSTICE OPTION

**V**  
SOC 260  
CJC 220  
BIO 150

**VI**  
SOC 250  
HUMANITIES/FINE ARTS ELECTIVE  
CJC 105  
ELECTIVE

**VII**  
CJC 206  
LEX 205  
CRIMINAL JUSTICE ELECTIVE

## LAW ENFORCEMENT OPTION

**V**  
CJC 103  
BIO 150  
SOC 260  
CJC 105

**VI**  
CJC 211  
SOC 250  
HUMANITIES/FINE ARTS ELECTIVE

**VII**  
CRIMINAL JUSTICE ELECTIVE  
CJC 222  
ELECTIVE

## CORRECTIONS OPTION

### V

CJC 105  
SOC 260  
BIO 150

### VI

SOC 265  
CRIMINAL JUSTICE ELECTIVE  
CRIMINAL JUSTICE ELECTIVE

### ELECTIVES:

CJC 126  
CJC 140  
CJC 141  
CJC 205  
CJC 208  
CJC 222  
CJC 225  
CJC 245

# Drafting and Design Engineering Technology

The Drafting and Design Engineering Technology curriculum prepares technicians for drafting and/or designing mechanical parts, mechanisms and mechanical systems.

Emphasis is placed on developing the student's ability to think and plan as well as on the development of drafting and design skills. Computer Aided Drafting (CAD) and conventional equipment will be used to produce drawings such as sectional views, subassemblies and major components of machinery and mechanical systems.

Coursework includes the study of technical drafting and design, materials, applied mechanics, mechanical systems, manufacturing methods, manufacturing processes, applied physics, technical mathematics, descriptive geometry, computer applications and written and oral communications.

Drafting and design technicians are employed in many types of manufacturing, fabrication, research and development and service industries.

## MAJOR COURSES

			Credit
DFT	101	Technical Drafting I	6
DFT	102	Technical Drafting II	3
DFT	103	Technical Drafting III	3
DFT	200	Geometric Tolerancing	3
DFT	151	Computer Aided Drafting I	3
DFT	152	Computer Aided Drafting II	3
DDF	201	Design Drafting I	8
DDF	202	Design Drafting II	8
DDF	203	Design Drafting III	8
MEC	121	Industrial Methods I	1
MEC	122	Industrial Methods II	1
MEC	123	Introduction to CAD-CAM	1
MEC	216	Industrial Materials	5
MEC	205	Strength of Materials	4
MEC	209	Introduction to Metallurgy	4
HYD	235	Hydraulics and Pneumatics	4
			<u>65</u>

## RELATED COURSES

CAS	106	Computer Applications	3
MAT	121	Technical Mathematics	5
MAT	122	Technical Mathematics	5
MAT	123	Technical Mathematics	5
PHY	101	Physics: Properties of Matter	4
PHY	102	Physics: Work, Power, and Energy	4
PHY	103	Physics: Electricity	4
PHY	106	Applied Mechanics	4
			<u>34</u>

## GENERAL EDUCATION

ENG	114	Oral Communication	3
ENG	151	English Composition I	5
ENG	152	English Composition II	5
SOC	150	Introduction to Sociology	5
HUM	—	Humanities/Fine Arts Elective	5
			<u>23</u>

## ELECTIVES

—	—	Elective	3
			<u>3</u>

## WORK EXPERIENCE

COE	101	Cooperative Work Experience	1
COE	102	Cooperative Work Experience	1
COE	103	Cooperative Work Experience	1
			<u>3</u>

## TOTAL CREDITS

125

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.



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## DRAFTING AND DESIGN ENGINEERING TECHNOLOGY

The six-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>IV</b>
CAS 106	DFT 200
DFT 101	DDF 201
MAT 121	PHY 103
MEC 121	SOC 150
<b>HUMANITIES/FINE ARTS ELECTIVE</b>	<b>V</b>
	DDF 202
<b>II</b>	ENG 114
DFT 102	MEC 209
DFT 151	PHY 106
ENG 151	<b>ELECTIVE</b>
MAT 122	
MEC 122	<b>VI</b>
PHY 101	DDF 203
	MEC 205
<b>III</b>	MEC 216
DFT 103	HYD 235
DFT 152	
ENG 152	
MAT 123	
MEC 123	
PHY 102	

## Early Childhood Associate

The Early Childhood Associate curriculum is designed to prepare individuals to work with children in learning environments from infancy through middle childhood. The program of study includes the subjects of child growth and development, physical and nutritional needs of children, care and guidance of children and communication with children and their parents. Students learn to foster the cognitive/language, physical/motor, and social/emotional development of children. The program of study combines theories and principles with opportunities for supervised practice.

Graduates are prepared to plan and implement develop mentally appropriate programs in early childhood settings. Employment opportunities are available in child development and child care programs, preschools, public and private schools, recreational centers, day care centers, kindergartens, some Head Start programs, and programs for children with special needs.

Community College State Board approval pending.

## MAJOR COURSES

	Credit
+EDU 110 Seminar Practicum: Preschool Environment	1
+EDU 117 Child Growth & Development I	3
+EDU 118 Child Growth & Development II	3
+EDU 119 Child Growth & Development III	3
+EDU 122 Child Health, Safety, & Nutrition	3
+EDU 125 Creative Activities in Early Childhood	6
+EDU 215 Behavioral Management	5
+EDU 216 Communication Activities in Early Childhood	6
EDU 217 Exploration Activities in Early Childhood	6
+EDU 225 Working with Children with Special Needs	3
EDU 220 Seminar Practicum: Special Needs Environment	1
+EDU 223 Working with the Child's Family Community	3
*EDU 101 Introduction to Early Childhood Education: Child Credential I or	3
EDU 106 Early Childhood Overview	3
*EDU 102 Introduction to Early Childhood Education: Child Care Credential II or	3
EDU 107 Early Childhood Principles and Practices	3
+EDU 211 Infant/Toddler Development and Activities	3
EDU 231 Early Childhood Curriculum Planning	5
+EDU 232 Child Care Administration	3
	<u>60</u>

## RELATED

+BUS 127 Business Mathematics	4
+SAF 119 First Aid and Adult & Infant/Child CPR	3
+SOC 250 Sociology of the Family and	5

Ten (10) hours of related subjects should be selected from the following:

ART 151 Art History and Appreciation	5
BIO 101 Human Anatomy and Physiology I	5
HIS 250 American History I	5
HIS 251 American History II	5
MUS 150 Survey of Music Literature	5
SOC 270 Modern Social Problems	5
SWK 150 Introduction to Social Work	5
	<u>22</u>

## GENERAL EDUCATION

+ENG 151 English Composition I	5
ENG 152 English Composition II	5
SOC 150 Introduction to Sociology	5
ENG 114 Oral Communications	3
— — Humanities/Fine Arts Elective	5
	<u>23</u>

**WORK EXPERIENCE**

EDU 110	Seminar Practicum: Preschool Environment	1
EDU 220	Seminar Practicum: Special Needs Environment	$\frac{1}{2}$

**ELECTIVES**

—	Elective	$\frac{3}{3}$
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**TOTAL CREDITS** 110

**CREDENTIAL OPTION:** Courses designated with this symbol\*. 6 Hours.

**DIPLOMA OPTION:** Courses designated with these symbols \*+. 65 Hours.

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

**EARLY CHILDHOOD ASSOCIATE**

The six-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>IV</b>
EDU 117	EDU 217
EDU 101 or EDU 106	EDU 215
ENG 151	EDU 211
ENG 114	EDU 225
BUS 127	RELATED ELECTIVE
<b>II</b>	<b>V</b>
EDU 118	EDU 216
EDU 102 or EDU 107	EDU 223
EDU 110	EDU 220
ENG 152	EDU 231
SOC 150	
<b>III</b>	<b>VI</b>
EDU 119	EDU 232
EDU 122	SAF 120
EDU 125	SOC 250
HUMANITIES/FINE	FREE ELECTIVE
ARTS ELECTIVE	RELATED ELECTIVE

# Electronics Engineering Technology

The Electronics curriculum provides a basic background in electronic related theory, with practical applications of electronics for business and industry. Courses are designed to develop competent electronics technicians who may work as assistants to engineers or as liaisons between engineers and skilled craftsman.

The electronics technician will start in one or more of the following areas: research, design, development, production, maintenance or sales. The graduate may begin as an electronics technician, an engineering aide, laboratory technician, supervisor or equipment specialist.

MAJOR COURSES			Credit
ELC 107	Electricity I		6
ELC 108	Electricity II		5
ELC 109	Electricity III		5
ELN 102	Electronic Fabrication Techniques		1
ELN 106	Electronics I		5
ELN 107	Electronics II		5
ELN 108	Electronics III		5
ELN 121	Digital Electronics I		5
ELN 122	Digital Electronics II		3
ELN 202	Communication Electronics		4
ELN 205	Analytic Electronic Troubleshooting		1
ELN 231	Electronics in Industry		4
ELN 236	Industrial Field Trips		1
ELN 221	Microprocessors I		4
ELN 270	Data Communications and Local Area Networks		4
ELN 272	Programmable Logic Controllers		4
ELN 274	Optical Electronics		2
ELN 273	Computer Integrated Manufacturing and Robotics		4
ELN 271	Electronics Project		$\frac{1}{69}$

**RELATED COURSES**

DFT 100	Technical Drafting	2
CSC 250	C Language Programming I	3
CSC 251	C Language Programming II	3
MAT 121	Technical Mathematics	5
MAT 122	Technical Mathematics	5
MAT 123	Technical Mathematics	5
PHY 100	Introductory Physics	5
CHM 101	Introduction to Chemistry	5
CAS 106	Computer Applications	3
MEC 123	Introduction to CAD/CAM	$\frac{1}{37}$



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## GENERAL EDUCATION

ENG 151	English Composition 1	5
ENG 114	Oral Communication	3
SOC 150	Introduction to Sociology	5
— —	Humanities/FineArts Elective	<u>5</u>
		18

## ELECTIVES

— —	Elective	<u>3</u>
		3

## WORK EXPERIENCE

COE 101	Cooperative Work Experience	1
COE 102	Cooperative Work Experience	1
COE 103	Cooperative Work Experience	<u>1</u>
		3

## TOTAL CREDITS

127

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

## ELECTRONICS ENGINEERING TECHNOLOGY

The seven-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>V</b>
ELC 107	ELN 122
ELN 102	ELN 202
CAS 106	ELN 236
MAT 121	ELN 274
	CSC 250
<b>II</b>	PSY 150
ELC 108	<b>VI</b>
ELN 106	ELN 231
ENG 151	ELN 221
MAT 122	ELN 272
<b>III</b>	CSC 251
ELC 109	ENG 114
ELN 107	<b>VII</b>
PHY 100	ELN 273
MAT 123	ELN 270
<b>IV</b>	ELN 205
DFT 100	MEC 123
ELN 108	ELN 271
ELN 121	HUMANITIES/FINE
CHM 101	ARTS ELECTIVE
ELECTIVE	

## ELECTRONICS ENGINEERING TECHNOLOGY EVENING PROGRAM

<b>I</b>	<b>VII</b>
ELC 107	HUMANITIES/FINE
MAT 121	ARTS ELECTIVE
CAS 106	ELN 108
<b>II</b>	<b>VIII</b>
ELC 108	ELN 121
MAT 122	CSC 250
ENG 151	SOC 150
<b>III</b>	<b>IX</b>
ELC 109	ELN 122
MAT 123	ELN274
PHY 100	CSC 251
	ELN 205
<b>IV</b>	<b>X</b>
DFT 100	ELN 231
ELN 102	ELN 221
ELN 271	
Elective	<b>XI</b>
<b>V</b>	ELN 272
ELN 106	ELN 273
CHM 101	
ENG 114	<b>XII</b>
	ELN 270
<b>VI</b>	MEC 123
ELN 107	
ELN 202	
ELN 236	

## General Occupational Technology

The General Occupational Technology curriculum is designed to meet the needs of full-time and/or part-time employees in business and industry. This program of study provides these individuals with an opportunity to upgrade their skills and/or to earn an associate degree by taking courses suited to their occupational needs. The curriculum consists of a basic core of courses in communications, mathematics, and social science. The balance of the curriculum consists of a sequence of technical courses individually tailored to satisfy the requirements of the student and/or the student's employer.

### MAJOR COURSES - 60-71 Quarter Hours Credit

Students are to select a minimum of sixty (60), maximum of seventy-one (71), quarter hours from the technical curriculum courses that are currently being offered by the College. An individualized program of study is prepared for each student by

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the student and his or her faculty advisor. The program of study will be based upon the student's educational needs, objectives, and will demonstrate an area of major concentration.

### RELATED COURSES - 31-42 Quarter Hours Credit

Related courses support and enrich the foundation of major technical courses. Students are to select a minimum of thirty-one (31), maximum forty-two (42), quarter hours of related electives from the following academic disciplines:

	Credit
<b>Mathematics</b>	<b>9-20</b>
Technical Math	
Business Math	
Statistics	
<b>Physics</b>	<b>8-15</b>
<b>Introduction to Computers</b>	<b>4-8</b>
<b>Business</b>	<b>3-9</b>
Economics	
Accounting	
Computer Programming	
<b>Other</b>	<b>3-9</b>
Drafting	

### GENERAL COURSES - 18-27 Quarter Hours Credit

Students are required to complete a minimum of eighteen (18), maximum of twenty-seven (27), quarter hours of general courses from the following academic disciplines:

	Credit
Communications	9-15
Grammar	
Composition	
Speech	
Report Writing	
Social Science	6-9
Psychology	
Sociology	
Political Science	

### ELECTIVES (0-11)

### WORK EXPERIENCE (0-4)

<b>TOTAL CREDITS</b>	<b>109</b>
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## General Technology Curriculum Core

General Technology Curriculum Core is designed as a career mobility program for technical students to acquire the general education and related courses in subject areas such as humanities; communications; social sciences; general computer studies; general graphics (drafting); and theoretical and applied sciences such as biology, chemistry, physics, and mathematics that are foundation courses to specific curriculums in the technical field. After completion of this certificate curriculum, the student has job skills for occupations requiring communications skills and/or science and mathematics. The student may take this program as the first level in a specific technical curriculum as an intended objective component of that technical curriculum. Students may also take this program for transfer to a technical curriculum at another community college system institution, either prior to or concurrently with enrollment at the institution at which they intend to pursue or are pursuing a technical curriculum degree.

	Credit
<b>RELATED</b>	
BIO 250 Anatomy and Physiology I	6
BIO 251 Anatomy and Physiology II	6
BIO 252 Microbiology	6
CAS 115 Introduction to Microcomputers and Software	4
MAT 150 College Mathematics I	5
MAT 121 Technical Mathematics	5
PHM 100 Pharmacology	3

Student must choose a minimum of 24 credit hours from the above list of courses.

### GENERAL EDUCATION

ENG 151 English Composition I	5
ENG 152 English Composition II	5
PSY 150 Introduction to Psychology	5
PSY 250 Human Growth and Development	<u>5</u>
	20

### ELECTIVES

— — Free Elective	3
— — Free Elective	<u>3</u>
	6

<b>TOTAL CREDITS</b>	<b>50</b>
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# Health Information Technology

The Health Information Technology curriculum prepares the individual with the knowledge and skills to process, maintain, compile and report health information. Technical knowledge and skills for the Health Information technician include those necessary to assemble, analyze, abstract and maintain medical records; supervise health information/medical record department functions, classify/code and index diagnosis and procedures for reimbursement, statistical and administrative purposes; provide information for cost control, assurance of quality health care, marketing and planning for health services and risk management; prepare reports for health-related organizations such as federal, state and regulatory agencies and those responsible for health care reimbursement; complete research studies such as those done to review the quality of health care and maintain the confidentiality and security of patient information.

Graduates may find employment in hospitals, rehabilitation facilities, long term care facilities, health insurance organizations, out-patient clinics, mental health facilities and home health organizations.

A graduate of an accredited associate degree program is eligible to apply to write the national qualifying examination for certification as an Accredited Record Technician (ART).

Courses in the following areas would be helpful to students: computer science, biology and health occupations.

	Credit
<b>MAJOR COURSES:</b>	
MRE 100 Orientation to Health Care Professions	2
MRE 101 Medical Terminology & Vocabulary I	3
MRE 102 Medical Terminology & Vocabulary II	3
MRE 103 Medical Terminology & Vocabulary III	3
MRE 104 Health Information Content & Maintenance	4
MRE 105 Legal & Ethical Aspects of Health Information	3
MRE 106 Health Information Standards & Regulations	3
MRE 107 Health Information Statistics	3
MRE 200 Basic ICD-9-CM Coding Concepts	3
MRE 201 Intermediate ICD-9-CM Coding Concepts	4
MRE 202 Advanced ICD-9-CM & CPT-4 Coding Concepts	4
MRE 203 Computers in Health Care	3
MRE 204 Directed Practice I	2
MRE 205 Directed Practice II	4
MRE 206 Directed Practice III	4
MRE 207 Intro to Health Information Transcription	3

MRE 208	Health Information Management	4
MRE 209	Quality Assurance in Health Care	3
MRE 210	Health Information Seminar	<u>3</u>
		61

## RELATED COURSES

BIO 250	Anatomy & Physiology I	6
BIO 251	Anatomy & Physiology II	6
BIO 124	Principles of Disease	4
CAS 101	Computer Familiarization	3
OSC 105	Keyboarding	4
BUS 127	Business Mathematics	4
PHM 100	Pharmacology	<u>3</u>
		30

## GENERAL EDUCATION

ENG 151	English Composition I (C) or	5
ENG 111	Freshman English (S)	5
ENG 152	English Composition II (C) or	5
ENG 112	Freshmen English (S)	5
ENG 114	Oral Communication (C) or	3
SPH 161	Fundamentals of Speech Communications (S)	3
PSY 150	Introduction to Psychology (C) or	5
PSY 201	Introduction to Psychology (S)	<u>5</u>
		18

(C) Cape Fear Community College  
(S) Southeastern Community College

## ELECTIVES

—	—	Elective	<u>3</u>
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**TOTAL CREDITS** **112**

## \*HEALTH INFORMATION TECHNOLOGY

The seven-quarter sequence of courses recommended for the full-time student is:

<b>I</b>		<b>III</b>
<b>MRE 100</b>		<b>MRE 103</b>
<b>MRE 101</b>		<b>MRE 105</b>
<b>BIO 250</b>		<b>MRE 106</b>
<b>ENG 151</b>		<b>BIO 124</b>
<b>BUS 127</b>		<b>OSC 105</b>
<b>II</b>		<b>IV</b>
<b>MRE 102</b>		<b>MRE 200</b>
<b>MRE 104</b>		<b>MRE 107</b>
<b>BIO 251</b>		<b>CAS 101</b>
<b>ENG 152</b>		<b>ENG 114</b>
		<b>PHM 100</b>

\*This program is currently seeking accreditation.

## Hotel and Restaurant Management

The Hotel and Restaurant Management curriculum prepares students to work as supervisory and management personnel in hotels, restaurants and clubs. Areas of study include front office management, accounting, sales promotion, food and beverage control, personnel management, food preparation and service. An internship program in the field may be offered the student to acquire industry experience under the direction of a qualified manager and college supervisor.

The graduate has an opportunity for employment with hotels, clubs, restaurants, airlines, colleges, schools, convalescent homes, government services and hospitals.

	Credit
<b>MAJOR COURSES</b>	
HRM 101 Introduction to the Hospitality Industry	3
HRM 107 Organization and Administration	3
HRM 137 Food and Beverage Management	3
HRM 143 Basic Sanitation	3
HRM 133 Front Office Procedures	3
HRM 239 Housekeeping Management	3
HRM 120 Hospitality Industry Training	3
HRM 240 Hospitality Human Resources Management	3
HRM 201 Hotel/Motel Security Management	3
HRM 245 Food and Beverage Service	4
HRM 222 Marketing of Hospitality Services	3
HRM 205 Hospitality Law	3
HRM 241 Food and Beverage Controls	3
HRM 243 Hospitality Purchasing Management	3
HRM 248 Hospitality Industry Computer Systems	4
HRM 246 Hospitality Management Problems	3
HRM 202 Convention Management and Service	3
— — Technical Electives	3
	56
<b>RELATED COURSES</b>	
ACC 120 Accounting I	5
ACC 121 Accounting II	5
ACC 122 Accounting III	5
BUS 127 Business Mathematics	4
BUS 135 Advanced Business Mathematics	4
CAS 101 Computer Familiarization	3
OSC 105 Keyboarding	4
MKT 232 Sales Development	3
	33
<b>GENERAL EDUCATION</b>	
ENG 151 English Composition I	5
ENG 114 Oral Communications	3
PSY 150 Introduction to Psychology	5
— — Humanities/Fine Arts Elective	5
	18

### ELECTIVES

—	—	Elective	3
			3

### WORK EXPERIENCE

COE 101	Cooperative Work Experience I	1
COE 102	Cooperative Work Experience II	1
COE 103	Cooperative Work Experience III	1
		3

### TOTAL CREDITS

113

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

### RESTRICTED TECHNICAL ELECTIVES

Students must complete a minimum of 3 credit hours from the following technical electives. An additional course from this list may be chosen in place of COE 101-103.

	Credit
HRM 102 Tourism and the Hospitality Industry	3
HRM 138 Food Production Principles	3
HRM 115 Hospitality Energy & Water Management	3
HRM 124 Managerial Accounting for the Hospitality Industry	3
HRM 203 Hospitality Industry Engineering Systems	3
HRM 224 Quality Control	3
HRM 223 Hotel/Motel Sales Promotion	3

### HOTEL/RESTAURANT MANAGEMENT

The six-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>IV</b>
BUS 127	ACC 122
HRM 101	HRM 201
HRM 107	HRM 243
CAS 101	HRM 240
OSC 105	MKT 232
ENG 114	TECHNICAL ELECTIVE
<b>II</b>	<b>V</b>
HRM 143	HRM 245
HRM 133	HRM 222
ACC 120	HRM 241
BUS 135	HRM 205
PSY 150	TECHNICAL ELECTIVE
	FREE ELECTIVE
<b>III</b>	<b>VI</b>
ACC 1121	HRM 248
HRM 137	HRM 202
HRM 239	HRM 246
HRM 120	HUMANITIES/FINE ARTS
ENG 151	ELECTIVE



# Instrumentation Technology

The Instrumentation Technology curriculum provides a program of study to develop knowledge of measuring and controlling devices and to develop the technical skills involved in the application of instrument control to processes, systems, and operations of modern industry. The instrumentation technician is a key person in keeping a processing plant operating. This individual is responsible for both production and production control and must deal with variables that affect manufacturing processes such as temperature, flow, level, humidity, density and viscosity. In many plants when a piece of equipment breaks down, employees are laid off until the instrumentation person can repair the equipment and production is resumed. This person's knowledge of mechanics, electronics, pneumatics and the manufacturing processes is the key factor in how quickly a machine or plant may again resume operation.

The instrumentation technician may select, install, calibrate, check out and maintain sensing, telemetering, and recording instrumentation and circuitry. Other functions may include devising, setting up and operating instrumentation equipment involved in testing mechanical, structural or electrical equipment. The graduate may work as an instrumentation technician, engineering aide or associate, service specialist, laboratory technician or instrument field service technician.

	Credit
<b>MAJOR COURSES</b>	
ELC 107 Electricity I	6
ELC 108 Electricity II	5
ELC 109 Electricity III	5
ELN 102 Electronic Fabrication Techniques	1
ELN 106 Electronics I	5
ELN 107 Electronics II	5
ELN 108 Electronics III	5
ELN 121 Digital Electronics I	5
ELN 122 Digital Electronics II	3
ELN 223 Microprocessors Industrial Control Applications	6
ELN 224 Measurement and Control I	4
ELN 225 Measurement and Control II	5
ELN 226 Measurement and Control III	5
ELN 227 Industrial Motor Control	3
ELN 236 Industrial Field Trips	1
ELN 221 Microprocessors I	<u>4</u>
	68

## RELATED COURSES

CAS 106	Computer Applications	3
DFT 100	Technical Drafting	2
MAT 121	Technical Mathematics	5
MAT 122	Technical Mathematics II	5
MAT 123	Technical Mathematics III	5
PHY 100	Introductory Physics	5
PHY 104	Physics: Light and Sound	4
PHY 105	Physics: Heat and Fluids	4
CHM 101	Introduction to Chemistry	<u>5</u>
		38

## GENERAL EDUCATION

ENG 151	English Composition I	5
ENG 114	Oral Communication	3
PSY 150	Introduction to Psychology	5
— —	Humanities/FineArts Elective	<u>5</u>
		18

## ELECTIVES

— —	Elective	<u>3</u>
		3

## WORK EXPERIENCE

COE 101	Cooperative Work Experience	1
COE 102	Cooperative Work Experience	1
COE 103	Cooperative Work Experience	<u>1</u>
		3

## TOTAL CREDITS

127

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

## INSTRUMENTATION TECHNOLOGY

The seven-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>V</b>
ELN 102	ELN 122
ELC 107	ELN 224
CAS 106	ELN 236
MAT 121	SOC 150
	PHY 105
<b>II</b>	ELN 227
ELC 108	
ELN 106	<b>VI</b>
ENG 151	ELN 225
MAT 122	ELN 221
	PHY 104
<b>III</b>	ENG 114
ELN 107	
ELC 109	<b>VII</b>
PHY 100	ELN 226
MAT 123	ELN 223
	HUMANITIES/FINE ARTS
<b>IV</b>	ELECTIVE
DFT 100	
ELN 108	
ELN 121	
CHM 101	
ELECTIVE	

## Machining Technology

The Machining Technology curriculum is a comprehensive program designed to develop skills in the theory and use of hand tools, power machinery, computerized equipment and sophisticated precision inspection instruments. Basic machining skills and introductory computer numerical control (CNC) courses are taught in the first half of the program. The second half of the program emphasizes the set-up and operation of CNC machines, advanced CNC parts programming, CAD/CAM operations and quality assurance inspection skills.

Related coursework includes blueprint reading, applied mathematics through trigonometry, microcomputer skills and quality assurance theory.

Employment opportunities for machining technicians exist in manufacturing industries, public institutions, governmental agencies and in a wide range of specialty machining job shops.

	Credit
<b>MAJOR COURSES</b>	
MEC 103 Machining Tec. I	9
MEC 104 Machining Tec. II	8
MEC 105 Machining Tec. III	8
MEC 106 Machining Tec. IV	8
MEC 201 Machining Tec. V	4
MEC 108 Turning Center Prog.	3
MEC 107 Machining Center Pro.	3
MEC 202 Adv. Turning Center Prog.	2
MEC 206 Computer Aid. Manuf. I	5
MEC 203 Adv. Machining Center Prog.	2
MEC 204 Jigs and Fixtures I	5
MEC 208 Computer Aid. Manuf. II	5
MEC 210 Jigs and Fixtures II	<u>5</u>
	67

### RELATED COURSES

BPR 104 Blueprint Reading for Manufacturing I	3
MAT 101 Fundamentals of Math I	5
BPR 105 Blueprint Reading for Manufacturing II	2
MAT 102 Fundamentals of Math II	5
BPR 106 Blueprint Reading for Manufacturing III	3
MAT 104 Machinist Math I	5
MAT 105 Machinist Math II	5
DFT 207 Computer Aided Design	5
CAS 201 Microcomputers for Industry	3
ISC 102 Quality Control in Manufacturing	<u>3</u>
	37

### GENERAL EDUCATION

ENG 151 English Composition I	5
ENG 114 Oral Communication	3
SOC 150 Introduction to Sociology	5
— — Humanities/Fine Arts Elective	<u>5</u>
	18



### ELECTIVES

— — Elective	<u>3</u>
	3

### WORK EXPERIENCE

COE 101 Cooperative Work Experience	1
COE 102 Cooperative Work Experience	1
COE 103 Cooperative Work Experience	<u>1</u>
	3

### TOTAL CREDITS

25

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

### MACHINING TECHNOLOGY

The seven-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>V</b>
BPR 104	CAS 201
MAT 101	DFT 207
MEC 103	ENG 151
<b>HUMANITIES/FINE</b>	<b>MEC 201</b>
<b>ARTS ELECTIVE</b>	<b>MEC 202</b>
<b>II</b>	<b>VI</b>
BPR 105	SOC 150
MAT 102	MEC 203
MEC 104	MEC 204
ISC 102	MEC 206
<b>III</b>	<b>VII</b>
BPR 106	MEC 210
MAT 104	MEC 208
MEC 105	<b>ELECTIVE</b>
MEC 107	
<b>IV</b>	
MAT 105	
MEC 106	
MEC 108	
ENG 114	



# Manufacturing Engineering Technology

The primary objective of the Manufacturing Engineering Technology curriculum is the training of personnel to assist the engineer or small industry in planning, tooling, operating, servicing and supervising manufacturing operations. This curriculum provides a basic background of mechanical and related theory, with specific skills in the use of manufacturing and testing equipment. Students are given experiences in operating and servicing machines, accompanied by general education and management courses.

A graduate of this program may qualify for an entry position in one of several manufacturing functions: methods, analysis, production scheduling, quality control, materials testing, plant layout, time study, machine tooling, maintenance and equipment and instrument work.

	Credit
<b>MAJOR COURSES</b>	
ATR 201 Introduction to Robotics	4
BPR 108 Industrial Blueprint Reading	3
CAS 106 Computer Applications	3
CSC 250 C Language Programming I	3
DFT 151 Computer Aided Drafting I	3
DFT 152 Computer Aided Drafting II	3
DFT 200 Geometric Tolerancing	3
DFT 206 Computer Aided Design/Plant Layout	4
ELM 208 Control Systems	4
HYD 235 Hydraulics and Pneumatics	4
ISC 101 Industrial Safety	3
ISC 202 Quality Control & Statistics	4
ISC 204 Industrial Management	5
MEC 121 Industrial Methods I	1
MEC 122 Industrial Methods II	1
MEC 123 Introduction to CAD/CAM	1
MEC 207 Manufacturing Processes	3
MEC 216 Industrial Materials	5
MEC 220 Computer Integrated Manufacturing	4
WLD 101 Basic Welding	<u>2</u>
	63

## RELATED

CHM 101 Introduction to Chemistry	5
MAT 121 Technical Mathematics	5
MAT 122 Technical Mathematics	5
MAT 123 Technical Mathematics	5
MEC 209 Introduction to Metallurgy	4
PHY 101 Physics: Properties of Matter	4
PHY 102 Physics: Work, Power, and Energy	4
PHY 103 Physics: Electricity	<u>4</u>
	36

## GENERAL EDUCATION

ENG 114	Oral Communication	3
ENG 151	English Composition I	5
ENG 152	English Composition II	5
	Humanities/Fine Arts Elective	5
SOC 150	Introduction to Sociology	<u>5</u>
		23

## ELECTIVES

—	—	Elective	<u>3</u>
			3

## WORK EXPERIENCE

COE 101	Cooperative Work Experience	1
COE 102	Cooperative Work Experience	1
COE 103	Cooperative Work Experience	<u>1</u>
		3

## TOTAL CREDITS

125

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

**MANUFACTURING ENGINEERING TECHNOLOGY**  
The seven-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>V</b>
BPR 108	MEC 207
CAS 106	MEC 209
ENG 114	SOC 150
MAT 121	WLD 101
MEC 121	HUMANITIES/FINE ARTS ELECTIVE
<b>II</b>	<b>VI</b>
DFT 151	ATR 201
ENG 151	HYD 235
MAT 122	MEC 220
MEC 122	MEC 216
PHY 101	ELECTIVE
<b>III</b>	<b>VII</b>
DFT 152	CSC 250
ENG 152	ELM 208
MAT 123	ISC 202
MEC 123	ISC 204
PHY 102	
<b>IV</b>	
CHM 101	
DFT 200	
DFT 206	
ISC 101	
PHY 103	

# Marine Technology

The Marine Technology curriculum is designed to provide the science, English, mathematics, and practical skills essential for success in the area of marine scientific support. This curriculum provides the student with the opportunity to become proficient in the general knowledge and skills required of a scientific support technician through practical training aboard ship as well as in the classroom. The Marine Technology curriculum prepares individuals to use and maintain sophisticated equipment such as electronic navigation devices, physical and chemical measuring instruments, sampling devices, and data acquisition and reduction systems aboard ocean-going and other types of vessels.

Graduates of this program will be basically qualified to work in the following areas: data acquisition and reduction; environmental monitoring; geophysical exploration; general applied oceanography; field and laboratory biology; water analysis; water and wastewater treatment laboratory analysis; nuclear power plant environmental work; fishing gear construction and repair; small engine maintenance and repair; fishing; marine salvage; and other marine scientific activities. Employment opportunities are available with various state and federal agencies and with private businesses, and industry associated with marine science and research.

## MAJOR COURSES

		Credit
ECL 113	Environmental Measurements	2
MSC 131	Marine Biology	3
MSC 133	Marine Invertebrate Zoology	3
MSC 135	Aquarium Systems	2
MSC 213	Marine Vertebrate Zoology	4
	or	
MSC 134	Marine Animals of North Carolina	(4)
CHM 101	Introduction to Chemistry	5
CHM 109	Water Analysis I	2
CHM 224	Water Analysis II	3
ELC 100	Marine Electricity I	3
ELC 101	Marine Electricity II	3
ELN 140	Introduction to Marine Electronics	4
GEL 101	Marine Geology	4
SAF 121	First Aid and Marine Safety	3
MSC 101	Navigation I	3
MSC 102	Navigation II	3
MSC 103	Ocean Survey	2
MSC 104	Ocean Survey	2
MSC 105	Ocean Survey	2
MSC 106	Ocean Survey	2
MSC 107	Ocean Survey	2
MSC 108	Oceanographic Instrumentation	3
MSC 109	Oceanography I	3
MSC 110	Oceanography II	3
MSC 111	Net Construction Methods	2
MSC 112	Biological Net Construction I	2
MSC 113	Biological Net Construction II	2

MSC 114	Biological Sampling Methods	2
MSC 117	Practical Experience I	1
MSC 118	Practical Experience II	1
MSC 119	Practical Experience III	1
MSC 132	Power Boat Operations & Seamanship	2
MSC 141	Marine Projects	1
MSC 142	Marine Projects	1
MSC 143	Marine Projects	1
MSC 202	Data Processing I	2
MSC 205	Data Processing II	2
MSC 206	Estuarine Survey	5
PHO 110	Introduction to Photography	3
PME 101	Marine Engines I	2
PME 102	Marine Engines II	2
WLD 134	Marine Welding	2
		<u>100</u>

## RELATED COURSES

OSC 100	Basic Keyboarding	1
DFT 117	Drafting and Blueprint Reading	3
CAS 106	Computer Applications	3
MAT 121	Technical Mathematics	5
MAT 122	Technical Mathematics	5
MAT 123	Technical Mathematics	5
PHY 101	Physics: Properties of Matter	4
PHY 102	Physics: Work, Energy and Power	4
PHY 103	Electricity	4
		<u>34</u>

## GENERAL EDUCATION

ENG 151	Composition I	5
ENG 114	Oral Communication	3
PSY 150	Introduction to Psychology	5
— —	Humanities/Fine Arts	
— —	Elective	<u>5</u>
		18

## ELECTIVES(0-10)

— —	Technical Elective	<u>3</u>
		3

## WORK EXPERIENCE (0-12)

COE 101	Cooperative Work Experience 1	1
COE 102	Cooperative Work Experience 2	1
COE 103	Cooperative Work Experience 3	<u>1</u>
		3

## TOTAL CREDITS

155

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.



**MARINE TECHNOLOGY CURRICULUM**

The eight-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>V</b>
SAF 121	CHM 109
MAT 121	ECL 113
MSC 103	MSC 113
MSC 109	PHY 101
MSC 111	ELECTIVE
MSC 131	PME 102
MSC 132	MSC 105
<b>II</b>	<b>VI</b>
MAT 122	CAS 106
MSC 101	CHM 224
MSC 110	GEL 101
MSC 117	PHY 102
MSC 133	MSC 202
MSC 141	MSC 143
PHO 110	PSY 150
HUMANITIES/FINE	<b>VII</b>
ARTS ELECTIVE	MSC 134
<b>III</b>	<b>OR</b>
CHM 101	MSC 213
ENG 151	ELC 100
MAT 123	ENG 114
MSC 104	MSC 106
MSC 118	MSC 119
MSC 135	MSC 205
OSC 100	PHY 103
WLD 134	<b>VIII</b>
<b>IV</b>	ELN 140
DFT 117	MSC 107
MSC 102	MSC 114
MSC 108	MSC 206
MSC 112	ELC 101
MSC 142	TECHNICAL ELECTIVE
PME 101	

# *Medical Assisting*

The Medical Assisting Curriculum prepares the graduate to be a multi-skilled practitioner qualified to perform administrative, clinical and laboratory procedures. The administrative aspects of instruction cover scheduling appointments, processing insurance accounts, medical reports, medical records, medical billing and collection; transcription and computer operations. Clinical and laboratory aspects of study include preparation of the patient for examination, assessing vital signs, assisting with examination and treatment, performing routine lab tests, using the electrocardiograph machine and administration of medication, developing competencies in effective communication, managerial and supervisory skills,

recognizing and responding to emergencies, and demonstrating adherence to ethical and legal standards of medical practices are emphasized.

Graduates of programs accredited by The Committee on Allied Health Education and Accreditation (CAHEA) may apply to take the certification examination administered by the Certifying Board of the American Association of Medical Assistants.

Graduates may be employed in a variety of health related services, such as , physician's offices, hospitals, clinics, industries, insurance companies, public health departments, nursing home and extended care facilities.

A student may take the following courses of this program at Cape Fear Community College. After acceptance into the regional program, the student would take the balance of the coursework at James Sprunt Community College. Two spaces are available for CFCC students who transfer. This and other programs, offered through the Southeastern Regional Allied Health Consortium, are made possible through a grant from the Kate B. Reynolds Charitable Trust.

		<b>Credit</b>
CAS 126	Microcomputer Word Processing II	4
OSC 213	Office Procedures	3
ACC 120	Accounting I	5
MAT 121	Technical Mathematics	5
CAS 101	Computer Familiarization	3
ORI 150	College Survival Skills	1
ENG 151	English Composition I	5
ENG 152	English Composition II	5
ENG 114	Oral Communication	3
ENG 103	Report Writing	3
— —	Humanities/Fine Arts Elective	3
— —	Behaviorial/Social Science Elective	3
— —	Free Elective	3

# *Medical Laboratory Technology*

The Medical Laboratory Technology (MLT) curriculum prepares graduates to perform clinical laboratory procedures in chemistry, hematology, bacteriology, parasitology, serology, blood banking and body fluid analysis to develop data that may be used in the diagnosis of diseases and in evaluating the effectiveness of treatments.

The medical laboratory technician works under the supervision of a medical technologist and may be employed as a staff technician or assistant supervisor in a medical laboratory, or as a clinical instructor in an educational institution.

# CAPE FEAR COMMUNITY COLLEGE

The graduate is eligible to take the registry examination given by the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists for certification as a medical laboratory technician or the examination given by the National Certifying Agency as a clinical laboratory technician.

Individuals desiring a career in medical laboratory technology should, if possible, take algebra, biology and chemistry courses prior to entering the program.

A student may take the following courses of this program at Cape Fear Community College. After acceptance into the regional program, the student would take the balance of the coursework at Southeastern Community College. Two spaces are available for CFCC students who transfer.

		Credit
BIO 123	Microbiology	6
CAS 106	Computer Applications	3
SOC 150	Introduction to Sociology	5
ENG 114	Oral Communications	3
ENG 103	Report Writing	3
ORI 150	College Survival Skills	1

## Microcomputer Systems Technology

The purpose of the Microcomputer Systems Technology curriculum is to prepare graduates for employment with business, industry, and government organizations that use or are planning to use computers to process and manage information.

Using microcomputers or other small computer systems, students will learn to apply a variety of commonly used business applications and systems software; set up microcomputer hardware and install software; develop user training programs and user documentation; evaluate and recommend hardware and software; assist users in resolving hardware and software problems; and develop control and security procedures. Students will also learn the fundamentals of microcomputer networking.

		Credit
<b>MAJOR COURSES</b>		
CAS 109	Database Processing	4
CAS 101	Computer Familiarization	3
CAS 120	Introduction to DOS and Other Operating Systems	4
CAS 125	Microcomputer Word Processing I	4
CAS 130	Spreadsheet Applications I	2
CAS 140	Introduction to Telecommunications	5
CAS 203	Introduction to Local Area Networks	4
CAS 208	Desktop Publishing	3
CAS 210	Introduction to Mini/Mainframe Operations	4

CAS 220	Microcomputer Maintenance and Installation	4
CAS 222	Microcomputer Training and Support	4
CAS 224	Microcomputer Systems Project	4
CSC 201	BASIC Language Programming I	4
CSC 215	Introduction to Programming in C	4
— —	(FOUR) Major Technical Electives	<u>16</u>
		69

CAS 126	Microcomputer Word Processing II	4
CAS 142	OS/2 Operating System	4
CAS 146	Introduction to Computers and Multimedia	4
CAS 147	Introduction to Microcomputer Graphics	4
CAS 200	Database Processing II	3
CAS 204	Local Area Network Administration & Maintenance	4
CAS 211	Spreadsheet Applications II	2
CSC 217	Introduction to Pascal Programming	4

### RELATED

ACC 120	Accounting I	5
BUS 127	Business Mathematics	4
BUS 219	Office Supervision	3
MAT 121	Technical Mathematics	5
OSC 105	Keyboarding	<u>4</u>
		21

### GENERAL EDUCATION

ENG 151	English Composition I	5
ENG 114	Oral Communications	3
PSY 150	Introduction to Psychology	5
— —	Humanities/Fine Arts Elective	<u>5</u>
		18

### ELECTIVES

— —	Technical Elective	<u>3</u>
		3

**TOTAL CREDITS** **111**

### MICROCOMPUTER SYSTEMS TECHNOLOGY

At the present time Cape Fear Community College does not offer the Microcomputer Systems Technology program in its entirety. Students may, however, qualify for a Certificate in Microcomputer Systems Technology. The following is a suggested course sequence for those students wishing to pursue the Certificate option.

<b>I</b>	<b>III</b>
ENG 151	CAS 125
OSC 105	CSC 201
<b>II</b>	<b>IV</b>
CAS 101	CAS 109
CAS 120	CAS 130
	CAS 208



# Paralegal Technology

The Paralegal Technology curriculum trains individuals in basic knowledge and applications of the law to work under the supervision of attorneys. The paralegal/legal assistant can support attorneys by performing routine legal tasks, and assisting with more complicated and difficult legal work. Training will include legal specialty courses such as legal research, real estate, litigation preparation, as well as general subjects such as English, oral communications, mathematics, and computer skills.

Graduates of the Paralegal Technology curriculum are trained to assist an attorney or group of attorneys in many areas of the law. A paralegal/legal assistant is not able to practice law, give legal advice or represent clients in a court of law. However, paralegals/legal assistants can represent clients in some administrative hearings. Paralegal graduates will be able to assist in work on probate matters, conduct investigations, search public records, serve and file legal documents, perform library research, and provide office management. Employment opportunities and job descriptions vary greatly depending on whether a paralegal/legal assistant is hired by a private law firm, or a government agency, or a corporation such as a bank or insurance company.

## Credit

### MAJOR COURSES

CJC 115	Criminal Law	5
LEX 101	Introduction to Paralegalism	3
LEX 111	Legal Writing	2
LEX 113	Family Law	3
LEX 115	Commercial Law I	5
LEX 116	Commercial Law II	5
LEX 117	Torts and Litigation Preparation	3
LEX 132	Legal Research/Bibliography	7
LEX 135	Legal System	5
LEX 104	Investigation	3
LEX 205	Constitutional Law	5
LEX 208	Administrative Law	3
LEX 114	Property I	3
LEX 215	Property II: Title Search	4
LEX 216	Property III: Loan Closings	2
LEX 219	Computerized Legal Research	3
LEX 224	Wills	4
LEX 230	Bankruptcy and Collection	3
		68

### RELATED COURSES

OSC 105	Keyboarding	4
ACC 120	Accounting I	5
OSC 118	Document Production	4
CAS 125	Microprocessing Word Processing I	4
POL 250	American State and Local Government	5
BUS 127	Business Mathematics	4
		26

### GENERAL EDUCATION

ENG 151	English Composition I	5
ENG 152	English Composition II	5
ENG 114	Oral Communication	3
SOC 150	Introduction to Sociology	5
— —	Elective: Humanities/Fine Arts	5
		23

### ELECTIVES

— —	Elective	3
		3

### WORK EXPERIENCE

COE 101	Cooperative Work Experience	1
COE 102	Cooperative Work Experience	1
COE 103	Cooperative Work Experience	1
		3

### TOTAL CREDITS

120

**CO-OP OPTION:** Qualified students may elect to take cooperative education in place of free electives provided they acquire approval from the co-op director and department chairperson.

### PARALEGAL TECHNOLOGY

The seven-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>V</b>
LEX 101	LEX 104
LEX 115	LEX 208
LEX 135	LEX 216
BUS 127	LEX 224
	LEX 230
<b>II</b>	<b>VI</b>
ACC 120	LEX 205
ENG 151	CAS 125
LEX 116	SOC 150
LEX 117	LEX 219
OSC 105	
<b>III</b>	<b>VII</b>
ENG 152	ENG 114
LEX 114	POL 250
LEX 132	HUMANITIES/FINE
OSC 118	ARTS ELECTIVE
	ELECTIVE
<b>IV</b>	
LEX 111	
LEX 113	
LEX 215	
CJC 115	



## *Real Estate* (Technical Specialty)

The purpose of the Real Estate (Technical Specialty) curriculum is to provide the prelicensing education requirements needed for real estate salespersons and brokers.

The courses required by the North Carolina Real Estate Commission for prelicensing which are covered in this curriculum are Fundamentals of Real Estate, Real Estate Law, Real Estate Finance, and Brokerage Operations. In addition to these courses, Real Estate Math is also included.

After successful completion of Fundamentals of Real Estate, an individual may make application with the Real Estate Commission to take the prelicensing real estate salesperson examination. After successful completion of all the courses required by the Real Estate Commission, an individual may make application with the Commission to take the real estate prelicensing broker examination.

Employment opportunities are available in real estate firms as salespersons or brokers as well as a real estate brokers in one's own business.

	Credit
<b>MAJOR COURSES</b>	
RLS 103 Fundamentals of Real Estate	6
RLS 114 Real Estate Law	3
RLS 115 Real Estate Finance	3
RLS 116 Real Estate Brokerage Operations	<u>3</u>
	15
<b>RELATED</b>	
RLS 109 Real Estate Math	<u>3</u>
	3
<b>TOTAL CREDITS</b>	<b>18</b>

## *Real Estate Appraisal*

The purpose of the Real Estate Appraisal curriculum is to provide the prelicensing and the pre-certification appraisal education requirements approved by the N.C. Real Estate Commission.

The courses required by the N.C. Real Estate Commission for prelicensing as a "State-licensed" appraiser are covered in this curriculum. These courses are Introduction of Real Estate Appraisal, Valuation Principles and Procedures, and Applied Residential Property Valuation.

The courses required by the N.C. Real Estate Commission for pre-certification as a "State-certified" appraiser are also provided. These courses are Introduction to Income Property Appraisal, Advanced Income Capitalization Procedures, and Applied Income Property Valuation. A good math background

is very important in this curriculum. It is recommended that a student have mastered competencies found in a basic algebra course before taking Advanced Income Capitalization Procedures.

The courses required for the "State-licensed" appraiser and the "State-certified" appraiser must be completed in sequential order.

In addition to meeting the education requirements to become a "State-licensed" appraiser and/or a "State-certified" appraiser, an individual must pass the appraisal examinations given by the N.C. Real Estate Commission and meet the appraisal experience requirements. A "State-licensed" or "State-certified" appraiser will be able to identify himself or herself to the public as being state licensed and/or state certified, and will be qualified to perform appraisals in federally-related transactions.

	Credit
<b>MAJOR COURSES</b>	
APR 131 Introduction to Real Estate Appraisal	3
APR 132 Valuation Principles and Procedures	3
APR 133 Applied Residential Property Valuation	3
APR 241 Introduction to Income Property Appraisal	3
APR 242 Advanced Income Capitalization Procedures	3
APR 243 Applied Income Property Valuation	<u>3</u>
<b>TOTAL CREDITS</b>	<b>18</b>



# COLLEGE TRANSFER, GENERAL EDUCATION & TECHNICAL COURSE DESCRIPTIONS

## **ACC 120 - Accounting I**

This first course in accounting covers the principles, techniques, and tools of accounting. The student is introduced to the mechanics of accounting. The process of accounting includes the collecting, summarizing, and analysis of financial information.

Course Hours Per Week: Class 4, Lab 2.

Quarter Hours Credit: 5.

Prerequisites: BUS 127, MAT 121

## **ACC 121 - Accounting II**

This course is a study of partnership and corporation accounting including a study of payrolls, federal and state taxes. Emphasis is placed on the recording, summarizing, and interpreting data for management controls rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems.

Course Hours Per Week: Class 4, Lab 2.

Quarter Hours Credit: 5.

Prerequisite: ACC 120

## **ACC 122 - Accounting III**

This course is concerned with the design of the system of records, the preparation of reports based on recorded data, and the interpretation of the reports in a business firm. The use of accounting data and reports provides management with the information as to what has taken place in the business and how the information is used to make future business decisions.

Course Hours Per Week: Class 4, Lab 2.

Quarter Hours Credit: 5.

Prerequisite: ACC 121

## **ACC 125 - Accounting IV**

This course examines the basic analytic tools used by a firm's management to plan, staff, finance, and control operations. Interpretation and determination of various quantitative and financial statistics is emphasized.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ACC 122

## **ACC 128 - Computerized Accounting I**

This is a course in computer record keeping. The content of the course will include the general ledger and the preparation of financial statements, data entry and updating of accounts receivable and accounts payable, inventory purchase cost and control, and sales and invoice preparation.

Course Hours Per Week: Class 1, Lab 2.

Quarter Hours Credit: 2.

Prerequisites: ACC 120, CAS 101

## **ACC 129 - Taxes I**

This course is the application of federal and state taxes to various businesses and business conditions. It is a study of the following taxes: income, payroll, intangible, capital gain, sales and use, excise and inheritance.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

## **ACC 220 - Intermediate Accounting I**

This course is a review of the accounting information processing system, the statement of income, and statement of cash flows. The course includes the study of basic interest concepts of future and present values, cash and receivables, and the measurement of cost of goods sold and merchandise inventory.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: ACC 122

## **ACC 221 - Intermediate Accounting II**

The second quarter in intermediate accounting includes the study of property, plant, and equipment and the concepts and methods of depreciation. This is a study of intangible assets, income recognition, short-term and long-term debts by the borrower and the lender. Also, the formation of a corporation and the buying and selling of securities is included in the course.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: ACC 220

## **ACC 225 - Cost Accounting I**

The first course in cost accounting includes the study of cost concepts, cost behavior, job order costing, cost estimation, and allocating overhead costs and variance analysis. The course includes a study of weighted-average and first-in first-out costing, material and lost units costing, and joint product and by-product costing.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: ACC 122

## **ACC 226 - Cost Accounting II**

This course is concerned with standard costs for material and labor, standard costs for factory overhead, the budgeting process, cash budgets, forecasted statements, cost-volume-profit analysis, and the concept of variable costing.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: ACC 225



## **ACC 228 - Computerized Accounting II**

This course is designed to help the student use his accounting knowledge to learn how to use a spreadsheet software as a problem-solving and decision-making tool. The content of the course will include what-if-making tool. The content of the course will include what-if-modeling, usage of databases for measuring performance, creating and using macros, and entering accounting data into an integrated accounting software.

Course Hours Per Week: Class 1, Lab 2.

Quarter Hours Credit: 2.

Prerequisite: ACC 128

## **ACC 230 - Taxes II**

This course is a continuation of the study of the following taxes: income, payroll, intangible, capital gain, sales and use, excise, and inheritance taxes.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: ACC 129

## **ACC 231 - Auditing**

This course is a study of how account balances are derived and the types of transactions or entries which may alter the proper statement of various account balances. Topics covered include the principles of planning and conducting audits and investigations, collecting data on working papers, arranging and systemizing the audit, and writing the audit report. Emphasis is placed on audit theory, internal auditing, report methods, and internal control.

Course Hours Per Week: Class 4.

Quarter Hours Credit: 4.

Prerequisite: ACC 220

## **ANT 150 - Introduction to Anthropology**

This course is an overview of the field of anthropology. Topics include the physical evolution of mankind, biological variation within human populations, historical development of cultures, linguistics, and archeological findings.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **APR 131 - Introduction to Real Estate Appraisal (R-1)**

This course introduces the student to the subject of real estate appraisal and prepares the student for the R-2 course on "Valuation Principles and Procedures". It begins with coverage of basic real property law, followed by coverage of the various concepts of value and the operation of real estate markets. Relevant mathematical concepts are then reviewed and the student is introduced to statistical concepts used in appraisal practice. Next comes coverage of real estate financing terminology and practices, followed by an introduction to the basics of residential construction and design. The student is then provided an overview of the entire valuation (appraisal)

process, and the course concludes with specific coverage of residential neighborhood analysis and property analysis, two of the most important preliminary steps in the appraisal process.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **APR 132 - Valuation Principles and Procedures (R-2)**

This course focuses on the procedures (methodology) used to develop an estimate of property value and how the various principles of value relate to the application of such procedures. Emphasis is on appraisal of residential 1-4 unit properties and small farms; however, all the concepts and procedures covered are applicable to the appraisal of all types of properties. The course begins with a review of the appraisal process and proceeds into thorough coverage of the sales comparison approach, followed by site valuation methods used to appraise residential 1-4 unit properties. The cost approach is then covered in depth. The basic concepts and methodology associated with the income approach are covered, with emphasis on direct capitalization using an overall rate and the gross rent multiplier technique. Finally, the student is introduced to the process of reconciling property value estimates obtained through application of the approaches to value.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: APR 131 or an equivalent course approved by the North Carolina Real Estate Licensing Board.

## **APR 133 - Applied Residential Property Valuation (R-3)**

This course covers laws, rules and standards which must be followed by appraisers and focuses on the application of principles and procedures to the appraisal of residential 1-4 unit properties and small farms. The student is first acquainted with federal laws/regulations applicable to appraisers and the provisions of the North Carolina Real Estate Appraisers Act and related Commission Rules. Next comes coverage of the Uniform Standards of Professional Appraisal Practice (which are part of the Commission's Rules), followed by coverage of appraisal reports, with emphasis on standard report forms. The student then participates in a comprehensive case study of an appraisal of single-family house using the URAR form. Instruction is then provided on various special considerations in appraising other types of residential 1-4 unit properties and in appraising farms. Finally, the student is introduced to appraising special (partial) property interests and to condemnation appraisals.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: APR 132 or an equivalent course approved by the North Carolina Real Estate Licensing Board.

**APR 241 - Introduction to Income Property Appraisal (G-1)**

This course introduces concepts and techniques used to appraise real estate income properties. It begins with a discussion of underlying economic principles and motivations for investing in income property. The appraisal process is then reviewed with emphasis on income property. This is followed by a discussion of real estate market analysis, property analysis, and site valuation. Mathematical and statistical concepts used in the appraisal of income property are covered next followed by coverage of how to use financial tables and/or financial calculators to solve a variety of problems associated with analysis of real estate income properties, including present value, loan calculations, estimation of net operating income, and estimation of before tax cash flow. Next, students learn how to estimate the value of a real estate income property by using a gross income multiplier and by direct capitalization with an overall rate. Finally, students are introduced to other capitalization rates.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: APR 133 or an equivalent course approved by the North Carolina Real Estate Licensing Board.

**APR 242 - Advanced Income Capitalization Procedures (G-2)**

This course reviews and then expands on the concepts introduced in Course G-1. The direct capitalization techniques introduced in G-1 are expanded to include various band of investment and residual techniques used in income property appraisal. This is followed by a thorough discussion of the concepts of yield rates and of discounted cash flow analysis (yield capitalization), which is the primary focus of this course. Financial leverage is also discussed so students better understand the relationship between various yield rates and capitalization rates. Several traditional yield capitalization formulas including Inwood, Hoskold, Ellwood and Akerson, are then discussed. Although rendered obsolete by the advent of financial calculators, these formulas are still used by many appraisers and students should be familiar with them. A financial calculator is required for this course.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: APR 241 or an equivalent course approved by the North Carolina Real Estate Licensing Board.

**APR 243 - Applied Income Property Valuation (G-3)**

This course covers laws, rules and standards which must be followed by appraisers and focuses on the application of principles and practices to the appraisal of income properties. The course begins with a review of federal laws/regulations applicable to appraisers, followed by coverage of the North Carolina Real Estate Appraisers Act and related Commission Rules, and coverage of the Uniform Standards of Professional Appraisal Practice (which are part of the Commission's Rules). Preparation of narrative appraisal reports is then covered, with

students also being introduced to the Uniform Commercial and Industrial Appraisal Report (UCIAR) form. Coverage then shifts to appraising leased income properties, with emphasis on the effect of various lease provisions on the value estimate. The student then participates in highest and best use case studies, followed by case studies of appraisals of various types of existing income properties, which is the major focus of the course. The course concludes by covering considerations in appraising various development projects.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: APR 242 or an equivalent course approved by the North Carolina Real Estate Licensing Board.

**ART 151 - Art History and Appreciation**

This course is an introduction to the history of art and provides a survey of the general periods of art from prehistoric times through the Early Christian Era.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**ART 152 - Drawing Fundamentals**

An introduction to fundamental drawing problems, stressing line, form, perspective, composition and picture space studies, using ink, pencil and charcoal. Still life landscape, etc. will be studied. The student will also be introduced to the basic visual elements through a theoretical approach.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**ART 153 - Drawing II**

This course is continued from Drawing I. The student will study further drawing techniques and concentrate on still life, portrait, life drawing, and landscape.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ART 152

**ART 155 - Beginning Painting**

This is a beginning course investigating a variety of media, techniques, and subjects.

Course Hours Per Week: Class 2, Lab 6.

Quarter Hours Credit: 5.

Prerequisite: None

**ATR 201 - Introduction to Robotics**

This is a fundamental course in application, programming, and maintenance of robot devices.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Corequisite: HYD 235



### **AUT 101 - Engine Systems Operation**

This course introduces the basic concepts of internal combustion engine operation. Content also includes terminology, identification, and location of all systems and parts of the automobile engine.

Course Hours Per Week: Class 1, Lab 2.

Quarter Hours Credit: 2.

Prerequisite: None

### **AUT 102 - Heating and Air Conditioning Diagnosis and Repair**

Course contents include theory of automotive air conditioning, heating and engine cooling system operation, identification and function of system components and methods for performing system test. Students will also learn the appropriate methods for removing and replacing system components and additives.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: None

### **AUT 103 - Basic Automotive Electronics**

This course is designed to introduce the student to electronics as it applies automotive applications. Topics include Ohms law, semiconductor principles, transistor operation, and introduction to microprocessors.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: None

### **AUT 104 - Braking Systems**

Course content includes the principles of operation, types, and diagnosis and repair of hydraulic and mechanical braking systems.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: None

### **AUT 105 - Suspension and Steering Systems**

Principles of operation, types, and diagnosis and repair of steering and suspension systems are introduced. Course content is centered on manual and power steering systems, and standard and electronically-controlled suspension systems.

Course Hours Per Week: Class 3, M. Lab 9.

Quarter Hours Credit: 6.

Prerequisite: None

### **AUT 106 - Electrical Fundamentals and Engine Electrical Systems**

Basic principles of electricity will be covered in this course in addition to reading wiring diagrams and the use of test equipment. Course content will also include battery, starter system, and charging system diagnosis and service.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: AUT 103 or permission of instructor

### **AUT 107 - Engine Performance I**

Students are introduced to the basic principles, systems and procedures required for diagnosing and restoring engine performance through the use of electrical and electronic test equipment.

Course Hours Per Week: Class 3, M. Lab 9.

Quarter Hours Credit: 6.

Prerequisite: None

### **AUT 108 - Chassis Electrical Systems**

Instruction will include advanced diagnostics, service, and repair of the following automotive electrical/electronic systems: lighting; gauges; warning devices; driver information; horn; wiper/washer and other automotive accessory systems.

Course Hours Per Week: Class 3, M. Lab 9.

Quarter Hours Credit: 6.

Prerequisite: AUT 103 or permission of instructor

### **AUT 109 - Engine Performance II**

Instruction is provided in the use of scan tools and service manuals used in conjunction with vehicle on board electronic engine control systems to diagnose engine performance and vehicle emission problems. Students will also learn to apply advanced driveability and diagnostic techniques to locate and repair performance problems. Prior to enrolling in Engine Performance II, students should have successfully completed Engine Performance I.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: AUT 107

### **AUT 110 - Antilock Braking Systems**

Instruction is provided in the theory of operation, components, and diagnosis and service of power-assisted and computerized antilock braking systems. Use of specialized diagnostic equipment and service information is emphasized.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: AUT 104 or permission of instructor

### **AUT 111 - Wheel Alignment**

Instruction is provided in two-and four-wheel alignment diagnosis, repair and adjustment.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

### **AUT 201 - Manual Drive Train and Axles**

Students are introduced to principles of power transmissions through front, rear, all-wheel and four-wheel-drive automotive and light truck drive trains. Laboratory experience is provided in troubleshooting, disassembly, repair and reassembly of clutches, drive lines, various types of manual transmissions and transaxles, transfer cases and axle assemblies.

Course Hours Per Week: Class 4, M. Lab 9.

Quarter Hours Credit: 7.

Prerequisite: None

**AUT 202 - Automatic Transmissions/Transaxles**

Course content includes principles of operation, troubleshooting, disassembly, repair, and reassembling automatic transmissions, and transaxles.

Course Hours Per Week: Class 4, M. Lab 6.

Quarter Hours Credit: 6.

Prerequisite: None

**AUT 203 - Engine and Chassis Electrical Systems**

**Application**

Upon completion of this course, student should be able to perform most tasks required in service and repair of automotive engine and chassis electrical/electronics systems. Tasks will be performed on "live work" vehicles using manufacturers' recommended procedures.

Course Hours Per Week: Class 3, M. Lab 9.

Quarter Hours Credit: 6.

Prerequisites: AUT 106 and AUT 108 or permission of instructor

**AUT 204 - Engine Diagnosis, Repair and Rebuilding**

Students are introduced to the techniques and practices used diagnosing, repairing, and rebuilding engines used in front-wheel drive and rear-wheel drive automobiles and light trucks.

Course Hours Per Week: Class 4, M. Lab 6.

Quarter Hours Credit: 6.

Prerequisite: AUT 101 or permission of instructor

**AUT 205 - Automotive Climate Control System Diagnosis and Repair**

Study of the operation of automotive heating and air conditioning systems to include electrical and mechanical controls. Students to develop competence in testing, servicing, and repair of the systems and system components in a safe and proper manner. Introduction to the automotive climate control (touch pad).

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: AUT 102 or permission of instructor

**AUT 206 - Advanced Engine Performance Applications**

Upon completion of this course, students should be able to perform tasks required in the diagnosis, service, and repair of automotive engine performance systems. Tasks will be performed on "live work" vehicles using manufacturers' recommended procedures.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: AUT 109 or permission of instructor

**BIO 101 - Human Anatomy and Physiology I**

This course is a study of the organizational plan of the human body and the body systems concerned with motor activities, control and integration of functions, and reproduction. Laboratory experiences provide opportunities to see animal specimens illustrative of systems being studied.

Course Hours Per Week: Class 4, Lab 2.

Quarter Hours Credit: 5.

Prerequisite: None

**BIO 103 - Anatomy and Physiology**

This course is a study of the human body and the body systems involved in motor activities, control and integration of functions, and reproduction. Laboratory experiences provide opportunities to study the skeletal system and dissect an animal to study body structures. Some medical and anatomical terminology will be included.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

**BIO 107 - Human Anatomy and Physiology II**

This course is designed to familiarize the student with the changing body during normal growth and development, both physically and physiologically, as well as psychologically. The different phases of life, what effects society has during these phases, and how the body adjusts accordingly will be studied. The disease process will also be investigated to show how the body strives to maintain homeostasis during illness. The use and results of medical intervention will be covered during this study. Some of the more common diseases will be looked at, and the student will be encouraged throughout this course to apply the material studied to daily living experiences.

Course Hours Per Week: Class 4, Lab 2.

Quarter Hours Credit: 5.

Prerequisite: BIO 101

**BIO 110 - General Biology**

This course is an introduction to the concepts of biology. Emphasizes the modern view of man and other living organisms. Includes topics on the cell, energy, genetics, and ecology.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

**BIO 115 - Terminology and Vocabulary: Medical I**

Upon completion of this course, the student shall have an origin and development of word roots, prefixes, and suffixes commonly used in medical records; be able to correlate and use medical word components as proper medical terminology; be able to spell and pronounce medical terms including anatomical terms, diagnostic and therapeutic procedure terms, diseases and conditions, operations and treatments, special procedures; have an understanding of the basic human anatomy; become acquainted with terms which describe positions, directions, and planes of the body; and begin learning the major specialties and subspecialties dealing with the field of medicine.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Corequisite: BIO 250



**BIO 124 - Principles of Disease**

Upon satisfactory completion of the tasks for Principles of Disease processes, the student will demonstrate knowledge of classification of disease processes according to their etiology and organ system involvement; and presents physical signs and symptoms, complications, and preferred treatment of specific disease processes.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: MRE 102, BIO 122

**BIO 125 - Sectional Human Anatomy**

This course is a study of selected human anatomy in the various body planes with emphasis on the cross sectional presentation. The organs and organ systems of the head, thorax, and abdomen will be introduced from a sectional perspective. Particular attention will be focused on the anatomical relationship and common pathophysiology of organs in these areas. Dissection representations and various imaging modalities will be used to demonstrate the anatomy introduced.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

**BIO 150 - General Biology I**

The biology of living systems from the biochemical, molecular, and cellular level through the structure and function of the whole organism, including physiology, heredity, development and evolution. Topics include surveys ranging from unicellular specimens through mammalian species.

Course Hours Per Week: Class 4, Lab 4.

Quarter Hours Credit: 6.

Prerequisite: None

**BIO 151 - General Biology II**

An investigation of the nature of living systems and fundamental principles of scientific processes as they apply to current problems affecting the ecological balance of life on earth.

Course Hours Per Week: Class 4, Lab 4.

Quarter Hours Credit: 6.

Prerequisite: BIO 150 or equivalent

**BIO 215 - Microbiology**

This course is an introduction to the biology of microorganisms and their impact on medicine, health, industry, agriculture, and the environment. The basic techniques needed to isolate, observe, identify, and control microorganisms will be covered.

Course Hours Per Week: Class 3, Lab 4.

Quarter Hours Credit: 5.

Prerequisite: BIO 110

**BIO 250 - Anatomy and Physiology I**

This course covers the structure, functioning, and pathology of the following human body systems: Integumentary, Musculoskeletal, Nervous, the Special Senses, Endocrine, and Reproductive.

Course Hours Per Week: Class 4, Lab 4.

Quarter Hours Credit: 6.

Prerequisite: None

**BIO 251 - Anatomy and Physiology II**

This course covers the structure, functioning, and pathology of the following human body systems: Urinary, Lymphatic, Cardiovascular, Respiratory, and Gastrointestinal. Introductory medically oriented chemistry and fluid, electrolyte, and acid-base balance are studied in some detail.

Course Hours Per Week: Class 4, Lab 4.

Quarter Hours Credit: 6.

Prerequisite: None

**BIO 252 - Microbiology**

An introduction to the study of micro-organisms and their relation to individual and community health. Groups of organisms studied are yeasts, molds, bacteria, viruses, protozoa, and helminths. Laboratory work involves handling cultures, differential stains, cultivation, and metabolic activities of representative organisms. Problems in sanitation are also considered.

Course Hours Per Week: Class 4, Lab 4.

Quarter Hours Credit: 6.

Prerequisite: BIO 251

**BPR 104 - Blueprint Reading for Manufacturing I**

This is the first course in a series of three in which the student is trained to read blueprints which are used in a manufacturing facility. This course will focus on the fundamental aspects of print reading, such as the types of lines, orthographic projection, auxiliary views, detail and assembly drawings, sectional views, pictorial drawings, the title block, lists of materials, drawing notes, and the drawing change system. Basic sketching as an aid to blueprint reading will be introduced.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

**BPR 105 - Blueprint Reading for Manufacturing II**

This course is designed to train the student in the reading and interpretation of the more complex blueprints which are found in a manufacturing facility. Machining specifications such as thread representation and specification, callouts for machine processes, geometric dimensioning and tolerancing, gears, splines and serration specifications will be studied thoroughly. Sketching as a means to convey ideas and information will be emphasized throughout this course of study.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: BPR 104

**BPR 106 - Blueprint Reading for Manufacturing III**

This final course in reading and interpreting blueprints used in manufacturing will focus on complex parts, mechanisms and assemblies. The student will have the opportunity to apply previously learned skills to advanced blueprints. Blueprints obtained from local industry will be utilized where applicable. Numerical Control documents will be introduced and the student will learn their importance and their function in industry.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: BPR 105

**BPR 108 - Industrial Blueprint Reading**

An in-depth look at industrial prints and procedures. The student will be actively involved with prints that cover topics from basic title block orientation to instrumentation and control diagrams. The intent of this course is to provide the student with a reasonable working knowledge of industrial prints.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

**BUS 109 - Professional Development**

Students in careers involving office automation need training in technical as well as non-technical areas. The purpose of this course is to provide students with the kinds of non-technical knowledge and skills desirable by employers. The course will consist of a variety of activities designed to promote professional demeanor in such areas as attitude, dress, speech, work habits, and inter-personal office communications and relationships.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

**BUS 114 - Business Statistics**

A basic course in business statistics which includes the flow of funds statement, capital investment, changes in working capital, opportunity costs, internal rate of return, sensitivity analysis, probability distributions, analysis of variance, survey sampling, and correlation.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: BUS 127

**BUS 115 - Business Law I**

This is an introductory course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**BUS 123 - Business Finance I**

This course explains the scope, principles, and social importance of business finance to the different types of business ownership in our economic systems. Through the analysis of the financial statements - the balance sheets and income statements - the sources and uses of funds may be obtained for any form of business.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: ACC 121

**BUS 124 - Business Finance II**

This course explains the scope, principles, and social importance of business finance to the different types of business ownership in our economic systems. Through the analysis of the financial statements - the balance sheets and income statements - the sources and uses of funds may be obtained for any form of business. Financial statements are used by management as the basis for planning operations, including procurement of adequate financing, and as a means of exercising control over the financial position of the business and the efficient and profitable use of assets.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: BUS 123

**BUS 127 - Business Mathematics**

This course reviews the fundamental mathematical operations and their application to business problems. Topics covered include the fundamentals of problem-solving, computing with whole numbers and decimals, common and complex fractions, percentage, and interest.

Course Hours Per Week: Class 4.

Quarter Hours Credit: 4.

Prerequisite: None

**BUS 135 - Advanced Business Mathematics**

This course is a study of pertinent uses of mathematics in the field of business. The topics covered include payrolls, price marking, depreciation, distribution of profits, compound interest, and amortization.

Course Hours Per Week: Class 4.

Quarter Hours Credit: 4.

Prerequisite: BUS 127

**BUS 219 - Office Supervision**

Office supervision is a course designed to equip students with managerial skills and knowledge. Students will be given an opportunity to acquire the kinds of knowledge and skills they need to function more productively in an automated office environment. Included in the course of study will be learning modules pertaining to: organizational structures, leadership principles, time and stress management, listening skills, and verbal and non-verbal communications.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None



## **BUS 235 - Business Management**

This course explains the principles of business management, including an overview of the major functions of management, such as planning, staffing, controlling, directing, and financing.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **BUS 236 - Human Resource Management**

Covers the principles and techniques of office supervision as related to work in administrative office careers. Emphasis is placed upon areas such as: recruitment, selection, placement, training, promotion, health, safety, and services.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **BUS 237 - Principles of Supervision**

The student is introduced to the basic responsibilities and duties of the supervisor and his relationship to superiors, subordinates, and associates. Major emphasis is placed on the role of the supervisor in securing an effective work force. Methods of supervision are stressed.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **CAS 101 - Computer Familiarization**

This is an introductory course designed to give the novice a basic understanding of data processing and information management in today's computer environment. It deals with the currently most used forms of data processing, basic vocabulary tools, and an understanding of the computer as a part of our society.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: None

## **CAS 101-A - Computer Familiarization**

This course is designed to introduce the student to the basic concepts of data processing systems. The course will primarily deal with different computer hardwares, softwares and languages that are used by many industries.

Course Hours Per Week: Class 1.

Quarter Hours Credit: 1.

Prerequisite: None

## **CAS 101-B - Computer Familiarization**

The major portion of this class will deal with hands-on experience and is designed to develop the student's understanding of data processing systems. Students will be working with different software applications in the classroom that are currently being used by many industries.

Course Hours Per Week: Class 1, Lab 2.

Quarter Hours Credit: 2.

Prerequisite: None

## **CAS 106 - Computer Applications**

An introduction to the concepts of computer systems, and their applications using a "windows" oriented presentation, this course develops an understanding of computer hardware and software from the perspective of the average computer user. Emphasis is placed on concepts of the hardware components of a computer and the four major software components; the operating system, word processing, the spreadsheet, and the database. The course is not intended to provide training in any particular application product, but rather to emphasize concepts generic to all similar application packages.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **CAS 109 - Database Processing**

An introduction to programmable database management systems. Topics include comparison and contrasting of types of databases (hierarchical, relational, and network), data dictionaries, query languages, report generators, and integrate programming languages. The course will include a survey of major microcomputer and mainframe database systems. Hands-on activities with a programmable database management system will be included.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: CAS 101

## **CAS 115 - Introduction to Microcomputers and Software**

This course will introduce students to the microcomputer and the various types of software that are most often used in an office environment. The students will be prepared for advanced software classes but will not be proficient in any particular software package.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

## **CAS 120 - Introduction to DOS and Other Operating Systems**

This course introduces popular microcomputer operating systems emphasizing DOS but including UNIX and OS/2. The course also covers other pseudo-operating systems such as Windows and menuing environments. The topics covered include: DOS, OS/2, and UNIX commands, hard disk management, Windows software, and menuing software.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

## **CAS 125 - Microcomputer Word Processing I**

This course is an introduction to basic concepts of word processing. Students will use a major commercial word processing program to format, edit, save, retrieve, and print simple letters and memos.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: OSC 105, CAS 101 or instructor's consent

### **CAS 126 - Microcomputer Word Processing II**

This course builds on the content learned in Microcomputer Word Processing I. In this class the students learn to use more advance features of the word processing program including merging documents, creating tables, inserting graphics in a document, and creating sophisticated reports.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: CAS 125 or instructor's consent

### **CAS 130 - Spreadsheet Applications I**

An introduction to the use and application of microcomputer spreadsheet software to solve various business and financial problems. The student will learn how to create, modify, save, retrieve, and print spreadsheets; enter labels, values, and formulas; copy, format, erase, move, and protect cells; and use intrinsic spreadsheet functions. Student exercise will be drawn from variety of business and financial areas.

Course Hours Per Week: Class 1, Lab 2.

Quarter Hours Credit: 2.

Prerequisite: None

### **CAS 140 - Introduction to Telecommunications**

This course will expose the students to the principles of digital communications with a computer as well as data communications between host computers and between hosts and PCs. The students will learn the underlying principles and the basic hardware. They will install and set up PC software and hardware in order to access computer databases, other PCs, or emulate host computer hardware.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

### **CAS 142 - OS/2 Operating System**

This course is an in-depth study of OS/2 Operating System and will address the advantages, the disadvantages and the possible future of this operating system

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: CAS 101, CAS 120

### **CAS 146 - Introduction to Computers and Multimedia**

Students learn about using the computer to integrate and control diverse electronic media such as computer screens, video disc, CD-ROM disks, and speech and audio synthesizers.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: CAS 101, CAS 120

### **CAS 147 - Introduction to Microcomputer Graphics**

This course is an introduction to microcomputer graphic packages. Students will use paint and draw programs as well as clip art and scanned images to produce presentation quality documents. They will learn basic page layout that include both written text and graphic images. The students will use authoring language and software to produce on screen presentations.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

### **CAS 200 - Database Processing II**

A continuation of CAS 109 which provides additional instruction and practice with a programmable database system.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: CAS 109

### **CAS 201 Microcomputers for Industry**

This course will introduce the student to microcomputers and their applications in modern industry. The student will learn to install and configure various types of hardware and software. Topics of study will include computer interfaces, special application cards, hardware compatibility and software applications for industry.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: None

### **CAS 203 - Introduction to Local Area Networks**

In this course the student will learn the fundamentals of creating, maintaining, and operating a local area network (LAN) of microcomputers. Several major LAN software systems will be compared. The student will setup and operate a LAN.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: CAS 101, CAS 120, or instructor's consent

### **CAS 204 - Advanced Local Area Network Administration and Maintenance**

Using an existing network, the student will connect a LAN to a mini/mainframe host. The student will be able to set up specialized LAN servers. He will be able to create simple menus for users. He will be able to monitor and analyze LAN performance. The student will also be able to setup a remote, dial-in workstation on the network.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: CAS 203

### **CAS 208 - Desktop Publishing**

An introduction to desktop publishing using a major commercial desktop publishing software package running on a microcomputer. Basic principles of commercial graphics and page layout as well as software operation will be covered.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisites: CAS 101 or CAS 125



### **CAS 210 - Introduction to Mini/Mainframe Operations**

This is an introductory course to mini and mainframe computers. The student will learn time-sharing and systems management concepts as well as micro-mini communications.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: CAS 101 or instructor's consent

### **CAS 211 - Spreadsheet Applications II**

A continuation of BUS 210 to provide training in the advanced features of mode spreadsheets including macros, graphics, database functions, and importing and exporting data to and from other application software. More complex spreadsheet models will be presented.

Course Hours Per Week: Class 1, Lab 2.

Quarter Hours Credit: 2.

Prerequisite: CAS 130

### **CAS 220 - Microcomputer Maintenance and Installation**

This course is an introduction to microcomputer maintenance and peripheral setup. Topics covered in the course include: mother board switch setting, installing cards, connecting peripherals, and using diagnostic software.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: CAS 101, CAS 120, or instructor's consent

### **CAS 222 - Microcomputer Training and Support**

This course beginning with an introduction to adult training theories followed by lessons covering: sequencing content, presentation methods, effective listening skills, and preparing training aids. Students practice their training skills in the labs.

Course Hours Per Week: Class 4.

Quarter Hours Credit: 4.

Prerequisites: CAS 101, CAS 120, or instructor's consent

### **CAS 224 - Microcomputer Systems Project**

In this class the student has the opportunity to use the skills and knowledge gained in other microcomputer courses to propose and implement a solution to a computer related business problem. The design will be a system that could actually be used in a business setting. It will cover all phases of the process from analyzing the needs of the business to documenting how the installed system will be supported.

Course Hours Per Week: Class 2, Lab 4.

Quarter Hours Credit: 4.

Prerequisites: CAS 101, CAS 120, CAS 109, CAS 130, CAS 200, or instructor's consent

### **CHM 101 - Introduction to Chemistry**

This course offers a basic introduction to elements, compounds, mixtures, symbols, formulas, and weight relations in reactions and solutions. Students will be introduced to basic laboratory equipment and techniques.

Course Hours Per Week: Class 4, Lab 2.

Quarter Hours Credit: 5.

Pre/Corequisite: MAT 121 or pass Math Pretest

### **CHM 109 - Water Analysis I**

This is a course in the practical analysis of water with emphasis on marine-oriented techniques and procedures.

Course Hours Per Week: Class 1, M, Lab 3.

Quarter Hours Credit: 2.

Prerequisite: CHM 101 or CHM 118

### **CHM 114 - Basic Chemical Concepts I**

This is the first course of a two-quarter sequence in which the basic fundamentals of chemistry are introduced. Topics to be covered include: Measurements; properties of matter; elements, compounds, and mixtures; ions and compound formulas; moles; reactions and weight relations; solutions; and oxidation-reduction reactions. The laboratory will stress routine apparatus and techniques in conjunction with lecture material.

Course Hours Per Week: Class 5, Lab 6.

Quarter Hours Credit: 8.

Prerequisite: Acceptance into MAT 121. (Transfer credit or pass CFCC placement test)

### **CHM 115 - Basic Chemical Concepts II**

This is the second course of a two-quarter sequence in which the basic fundamentals of chemistry are introduced. Topics to be covered include: electrochemistry, gases, pH, and solubility. The laboratory sessions will stress routine apparatus and techniques, including an introduction to spectroscopy. A unit on laboratory hazards and safety is included.

Course Hours Per Week: Class 5, Lab 6.

Quarter Hours Credit: 8.

Prerequisite: CHM 114

### **CHM 116 - Descriptive Chemistry**

A survey of the elements, their "families", properties, compounds, sources, and uses. In the laboratory, preparation, detection and reactions of selected groups of elements are explored. Spectroscopy (Visible, Atomic Absorption (AA), Emission (AE), and Infrared (IR) introduced in CHM 115 is continued and enhanced. A written report on an assigned element is required.

Course Hours Per Week: Class 2, Lab 4.

Quarter Hours Credit: 4.

Prerequisite: CHM 115

### **CHM 118 - Basic Chemistry**

This course has been designed to acquaint the student with some of the basic chemical concepts. Discussions of hazardous materials will be included.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Pre/Corequisite: MAT 121 or Pass Math Pretest

### **CHM 130 - Organic Chemistry I**

This is a survey course in which the nomenclature and properties of organic compounds are introduced. An introduction to infrared spectra is included.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: CHM 115

### CHM 140 - Unit Processes

A laboratory course in which the student will set up and carry out such procedures as distillation, reflux, extraction, chromatography (Column, TLC, GLC, and HPLC), ion exchange, and spectroscopy (IR, UV, VIS, and AA).

Course Hours Per Week: Class 1, Lab 14.

Quarter Hours Credit: 8.

Prerequisites: CHM 116, CHM 130

### CHM 150 - Industrial Operations

A survey course in which selected examples of process equipment used in the chemical manufacturing industry are described and discussed. The student is introduced to basic calculations necessary in the design and utilization of such equipment. Field trips to local industries allow the students to observe the equipment in actual size and usage.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisites: CHM 116, CHM 130

### CHM 224 - Water Analysis II

This course a continuation of Water Analysis I as a course in the practical analysis of water with emphasis on marine-oriented techniques and procedures.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: CHM 101 or CHM 118

### CHM 231 - Organic Chemistry II

This is a continuation of the Organic Chemistry series in which organic reactions and syntheses are discussed and carried out in the laboratory. The students analyze results with such techniques as ultraviolet (UV) and infrared (IR) spectroscopy, gas chromatography (GC), and liquid chromatography (HPLC).

Course Hours Per Week: Class 3, Lab 6.

Quarter Hours Credit: 6.

Prerequisites: CHM 130, CHM 140

### CHM 232 - Organic Chemistry III

A continuation of the Organic Chemistry series in which "real-world" compounds are discussed. Other topics introduced will include: Nuclear Magnetic Resonance (NMR) spectroscopy, Mass (MS) spectroscopy and biochemicals. In the laboratory, various projects (LC, GC, UV) will be carried out by the students.

Course Hours Per Week: Class 3, Lab 4.

Quarter Hours Credit: 5.

Prerequisite: CHM 231

### CHM 233 - Biochemical Concepts

This is a continuation of Organic Chemistry series in which the structure, properties, and metabolism of biomolecules such as carbohydrates, lipids, proteins, and enzymes are discussed. Production formulation, and testing of pharmaceutical and food products are stressed.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: CHM 232, BIO 215

### CHM 243 - Industrial Analysis I (Qualitative Analysis)

A laboratory course in which the student will be expected to detect and report the presence of unknown cations in solutions.

Course Hours Per Week: Class 1, Lab 6.

Quarter Hours Credit: 4.

Prerequisite: CHM 140

### CHM 244 - Industrial Analysis II (Quantitative Analysis)

This is a laboratory course in which routine quantitative analyses are carried out. The techniques of titration, gravimetry, spectroscopy (UV-Vis, AA, AE), and chromatography (LC, GC) are practiced. Calibrations and simple statistical analyses are stressed.

Course Hours Per Week: Class 2, Lab 6.

Quarter Hours Credit: 5.

Prerequisite: CHM 243

### CHM 245 - Industrial Analysis III (Quantitative Analysis)

A survey of the sources, utilizations, analyses and treatments of water. In the laboratory, quantitative analysis which began in CHM 244 is continued, emphasizing water analyses.

Course Hours Per Week: Class 3, Lab 6.

Quarter Hours Credit: 6.

Prerequisite: CHM 244

### CJC 102 - Introduction to Criminology

This is a general course designed to familiarize the student with contemporary and historical theories of criminal behavior. An overview of social factors dealing with criminal behavior will also be given.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

### CJC 103 - Introduction to Criminal Investigation

This is a study of the elements of investigation from discovery through presentation in court. The student is introduced to preliminary investigation, collection and preservation of evidence, interviews and interrogation, descriptions of persons and property, sources of information, investigative report writing and case presentation.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

### CJC 105 - Firearms and Ballistics

This is a study to help the student develop an understanding, use and respect for various types of firearms and ballistics. Range practice will be given in the use of rifles, shotguns, and pistols with a special effort made to develop proficiency in the use of the service revolver. Instruction will be given in non-lethal weapons such as tear gas, and defensive tactics used in the handling of arrested persons.

Course Hours Per Week: Class 3, M. Lab 3.

Quarter Hours Credit: 4.

Prerequisite: Consent of instructor



## **CJC 108 - Research and Planning in Criminal Justice**

This course allows the student to conduct research and planning under the direct supervision of a criminal justice instructor. The course may be offered in one credit blocks up to five credit hours.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: Consent of instructor

## **CJC 111 - Introduction to Law Enforcement**

This course is designed to acquaint the student with the structure, function, jurisdiction and dynamics of American Law Enforcement Systems.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **CJC 113 - Introduction to Courts**

This is a course designed to acquaint the student with the structure, function, and dynamics of the criminal courts in America.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: CJC 150 or permission of the instructor

## **CJC 115 - Criminal Law**

This course is a study of North Carolina substantive criminal law. The elements of criminal laws, legal definitions, and rules of evidence are examined.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **CJC 126 - Ethics and Community Relations**

The study of the criminal justice system and its relationships to the community. The course will include attitudes, community tensions, metropolitan growth, ethics, and social control.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **CJC 130 - Law Enforcement Training**

This course is designed to provide the student with the skills and knowledge necessary to perform those tasks essential to function in law enforcement. The course consists of 402 hours of instruction in the following topic areas:

- (1) Course Orientation ..... 8 Hours
- (2) Laws of Arrest, Search, and Seizure ..... 16 Hours
- (3) Mechanics of Arrest:
  - Arrest Procedures ..... 8 Hours
  - Vehicle Stops ..... 6 Hours
  - Custody Procedures ..... 2 Hours
  - Processing, Fingerprinting, and
  - Photographing Arrestee ..... 4 Hours
- (4) Defensive Tactics ..... 24 Hours
- (5) Firearms ..... 48 Hours
- (6) Law Enforcement Driver Training ..... 16 Hours
- (7) Constitutional Law ..... 4 Hours
- (8) Law Enforcement Communications and

- Information Systems ..... 4 Hours
  - (9) Elements of Criminal Law ..... 24 Hours
  - (10) Juvenile Laws and Procedures ..... 8 Hours
  - (11) Emergency Medical Services ..... 40 Hours
  - (12) Patrol Techniques ..... 16 Hours
  - (13) Crime Prevention Techniques ..... 4 Hours
  - (14) Field Notetaking and Report Writing ..... 12 Hours
  - (15) Crisis Management ..... 10 Hours
  - (16) Special Population ..... 12 Hours
  - (17) Civil Disorders ..... 8 Hours
  - (18) Criminal Investigation ..... 28 Hours
  - (19) Interviews: Field and In-Custody ..... 8 Hours
  - (20) Controlled Substances ..... 8 Hours
  - (21) ABC Laws and Procedures ..... 4 Hours
  - (22) Electrical and Hazardous
    - Materials Emergencies ..... 12 Hours
  - (23) Motor Vehicle Laws ..... 20 Hours
  - (24) Techniques of Traffic Law Enforcement ..... 6 Hours
  - (25) Preparing for Court and Testifying in Court ... 12 Hours
  - (26) Dealing with Victims and the Public ..... 8 Hours
  - (27) Testing and Examination ..... 9 Hours
  - \*(28) Review ..... 6 Hours
  - \*(29) Testing ..... 7 Hours
- \*Not mandated by Title 12 of the Administrative Code, but is required by Cape Fear Community College.

Course Hours Per Week: Class 12, M. Lab 24.

Quarter Hours Credit: 20.

Prerequisite: None

## **CJC 131 - Police Officer Training**

This course consists of twenty (20) hours of Traffic Accident Investigation and two (2) hours of review. Students who wish to take the State examination for police officer must successfully complete CJC 130, CJC 131, and CJC 133.

Course Hours Per Week: Class 2.

Quarter Hours Credit: 2.

Prerequisite: None

## **CJC 132 - Deputy Sheriff Training**

The topics in this course consist of the Civil Process and Custody Procedures. Student will receive twenty-four (24) hours of instruction on the Civil Process, eight (8) hours on Custody Procedures, and one (1) hour of review. Students who want to take the State examination for deputy sheriff must successfully complete CJC 130, CJC 131, and CJC 133.

Course Hours Per Week: Class 1, Lab 2.

Quarter Hours Credit: 2.

Prerequisite: None

## **CJC 133 - Physical Training**

This course consists of forty-four (44) hours of training in nutrition and physical fitness. It is designed to engage the Basic Law Enforcement Training student in a physical fitness program that will improve endurance, strength, and agility required for the performance of law enforcement duties.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

**CJC 140 - Fingerprint Identification**

This course is a survey of the use of fingerprints in criminal investigations. Examination, comparison, and classification of fingerprints is included. The Henry System of classification is taught with additional modifications and F.B.I. extensions.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**CJC 141 - Handwriting Identification**

This is an introduction to the fundamentals of handwriting identification. An analysis of standard and deviant letters is studied in comparing questioned writings.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**CJC 150 - Introduction to Criminal Justice**

This is a general course designed to introduce the student to the historical, philosophical and contemporary views in the criminal justice system. This course also includes a study of the local, state and federal criminal justice agencies, their jurisdiction, organization, purpose, and objective.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**CJC 160 - Introduction to Corrections**

This course includes the history of corrections in the United States, prison designs, inmate problems, treatment, methods and procedures in correctional institutions.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**CJC 205 - Scientific Evidence**

This course examines the admissibility of evidence in a court of law. Emphasis is given to the types of scientific evidence which is within the jurisdiction the courts.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**CJC 206 - The Juvenile Justice System**

This is a general course designed to acquaint the student with problems and issues pertaining to the juvenile offenders and how they are processed by police, courts corrections systems.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**CJC 208 - Arson Investigation**

This is a study of the techniques used to investigate arson cases. It include investigative techniques, crime scene investigation, and laws applicable to unlawful burning.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**CJC 211 - Introduction to Criminalistics**

This is a general survey of the methods and techniques used in modern scientific investigation of crime, with emphasis on the practical use of these methods by the students. Laboratory techniques will be demonstrated and the student will participate in actual use of scientific equipment.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**CJC 220 - Criminal Justice Organization and Management**

Included in this course is an examination of the principles of organizational structure within police agencies. The duties and responsibilities of the police administrative staff will be examined. Recruitment, training, and discipline will be presented as part of the course study.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**CJC 222 - Crime Scene Processing**

This is a course which emphasizes collecting physical evidence at the crime scene. Topics included in this course are identification of physical evidence, the care of physical evidence, and the various types of evidence.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**CJC 225 - Security and Crime Prevention**

This course is a general survey of the methods and techniques utilized in theft prevention. Primary emphasis will be placed on alarm systems used in industry.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**CJC 245 - Security Management**

This course includes aspects of private security as well as management design for protecting property. Analysis of security, organizations, and protection systems will be discussed.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**CJC 250 - Contemporary Issues in Criminal Justice**

This course is a study of controversial issues affecting the criminal justice system. Topics may include use of deadly force, civil liability, police discretion, politics, and unionism.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None



## **COE 101 - Cooperative Work Experience**

This course is designed to enable qualified students to combine classroom learning with career-related work experience that is closely related to students' academic study. Emphasis is placed on parallel plans of school and work in business, industry, or government structured by measurable learning objectives. Upon completion, students will be able to locate permanent employment after graduation more readily because of their on-the-job work experience. Approval for Cooperative Work Experience must be obtained from the Co-op Director and department chair.

Course Hours Per Week: Co-op Hours 10

Quarter Hours Credit: 1.

**COE 102 - Cooperative Work Experience,  
COE 103 - Cooperative Work Experience,  
COE 104 - Cooperative Work Experience,  
COE 105 - Cooperative Work Experience,  
COE 106 - Cooperative Work Experience,  
Refer to COE 101**

## **CSC 165 - Basic Programming for Engineering Technology**

This is a fundamental course which develops the concepts of basic programming language. There will also be an introduction to a word processing language.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: MAT 121

## **CSC 201 - BASIC Language Programming I**

This introductory course of programming allows the student to identify and be able to work with an IBM Personal Computer, the processes of developing programs for this computer through the use of flow charts, and the BASIC language. The emphasis is placed on obtaining computational results without developing style of production or theory of programming.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **CSC 210 - BASIC Language Programming II**

This course provides the student who is already proficient in the fundamental techniques of BASIC programming with extended command functions and advanced operations. Included are internal and external data files, control formatting multi-dimensional arrays, advanced string variables, subroutines, and an exposure to the Assembler Language.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: CAS 201

## **CSC 215 - Introduction to Programming in C**

This is an introductory course in C Language. Laboratory exercises are used to provide experience in solving business data processing problems using C Language. C programs may be executed on a microcomputer running MS-DOS/PC-DOS or the UNIX operating system.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

## **CSC 217 - Introduction to Pascal Programming**

In this introductory course the students will use Pascal programming language on a micro computer. They will learn how to use a structured programming language with an emphasis on modular programming concepts.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

## **CSC 250 - C Language Programming I**

This class is designed as an introduction to C Language fundamentals for Engineering Technology. Topics will include C environment, program structure, elements of C, C operators, functions, and debugging.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: CAS 106 or equivalent

## **CSC 251 - C Language Programming II**

This class is a continuation of CSC 250. Topics will include pointers, passing variables, scope of variables, strings and arrays, and structuring data.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: CSC 250

## **DDF 201 - Design Drafting I**

Topographical drawing and mapping will be introduced. Fasteners, screw threads, springs, and keys will be covered with emphasis on specifying and delineating. Intersections and developments will be included with model solutions accompanying the problems. Projects may be assigned using CAD or conventional methods.

Course Hours Per Week: Class 6, M. Lab 6

Quarter Hours Credit: 8.

Prerequisite: DFT 103

## **DDF 202 - Design Drafting II**

Basic mechanisms of motion transfer will be studied as they relate to power trains. Assembly and subassembly drawings, with fit and function stressed, will be completed. Projects may be assigned using CAD or conventional methods.

Course Hours Per Week: Class 6, M. Lab 6.

Quarter Hours Credit: 8.

Prerequisite: DDF 201

### **DDF 203 - Design Drafting III**

Research to solve a problem in design will be implemented by consulting various manuals, periodicals, and through laboratory experiments. Preliminary design sketches, layout drawings, detail drawings, assembly and sub-assembly drawings and specifications are required as a part of the problem. CAD will be continued with an emphasis on design.

Course Hours Per Week: Class 6, M. Lab 3.

Quarter Hours Credit: 8.

Prerequisite: DFT 202

### **DFT 100 - Technical Drafting**

The field of drafting is introduced. The student learns the elementary practices and principles employed by drafters. This knowledge is put to use by making actual drawings. Basic shape and size descriptions are included for communication from technician to machinist or other artisan.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

### **DFT 101 - Technical Drafting I**

Students are introduced to the principles of the graphic language and the practices employed by drafters. This knowledge is put to use by making actual machine drawings. Skills are developed using conventional drafting equipment. In depth studies of orthographic projection, geometric construction, and dimensioning are included for communication from technician to machinist or other artisan. Compliance with ANSI standards is stressed.

Course hours Per Week: Class 4, M. Lab 6.

Quarter Hours Credit: 6.

Prerequisite: None

### **DFT 102 - Technical Drafting II**

Students will apply orthographic projection principles to the more complex drafting problems. Primary and secondary auxiliary views, simple and successive revolutions, and all types of sectional views will be included. The study of dimensioning practices will be continued with an emphasis on ANSI Standards. Drawings will be assigned using conventional methods.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: DFT 101

### **DFT 103 - Technical Drafting III**

This course covers the graphic symbols for electrical and electronic diagrams, use and application of welding symbols, and principles and methods of pipe drafting as per ANSI Standards. The procedures for drawing and projecting axonometric, oblique, and perspective drawings will be included with an emphasis on practical application. Drawings will be assigned using conventional equipment.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: DFT 102

### **DFT 117 - Drafting and Blueprint Reading**

The field of drafting is introduced. The student learns the elementary practices and principles employed by drafters. This knowledge is put to use by reading actual blueprints. Orthographic views, pictorial sketching, and dimensioning are included for communication from technician to machinist or other artisan.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **DFT 151 - Computer Aided Drafting I**

This course is an introduction to Computer Aided Drafting and Design Systems. Included are terminology; capabilities of a CAD system; major components of a CAD system; CAD drawing, editing, and modifying procedures; commands and modes for drawing basic geometric shapes; plotting, dimensioning, layering, and zooming techniques; and creation and storage of library elements.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: CAS 106 and knowledge of drafting

### **DFT 152 - Computer Aided Drafting II**

A continuation of DFT 151, Computer Aided Drafting I. Students will continue to work with new commands and command structure. Problems and exercises will place emphasis on advanced 2D and the introduction of 3D CAD.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: DFT 151

### **DFT 200 - Geometric Tolerancing**

This course introduces the standard drafting practices per ANSI Y14.5M which includes general dimensioning, general applications of tolerances and limits, and tolerance of position and form. The advantages of true position tolerancing will also be covered.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: DFT 102 or consent of instructor

### **DFT 206 - Computer Aided Design/Plant Layout**

The computer as an instrument for rapid development of concepts in design. Emphasis will be placed on plant arrangement where work areas and equipment layouts are rendered practical and safe. Computer Aided Design and Manufacturing will be continued through demonstrations and limited hands-on exercises.

Course Hours Per Week: Class 1, M. Lab 9.

Quarter Hours Credit: 4.

Prerequisite: DFT 106



### **DFT 207 - Computer Aided Design**

This course introduces the student to the use of computers for designing mechanical devices. The student will utilize personal computers to design mechanical objects and prepare necessary drawings for manufacturing. The geometry data will then be transferred to the Computer Aided Manufacturing (CAM) system for use in programming Computer Numerical Control (CNC) codes machine tools.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: BPR 106

### **DRA 150 - Introduction to Theatre**

An examination of theatre through dramatic literature and history, the artistic elements of acting and directing, and critical appreciation.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

### **DRA 160 - Introduction to Acting**

A look at acting styles and techniques and ways to develop them through scene-work. The student will acquire practice in developing and controlling the voice, body, and emotions as instruments of expression.

Course Hours Per Week: Class 5, Lab 2.

Quarter Hours Credit: 6.

Prerequisite: None

### **DRA 161 - Play Production**

A look at the varied requirements for staging a play through choosing and mounting a production in a studio theater.

Course Hours Per Week: Class 5, Lab 2.

Quarter Hours Credit: 6.

Prerequisite: DRA 150

### **DRA 175 - Introduction to Film**

An examination of the elements that make film a cohesive art form through the study of certain films. Film history and the technical and creative processes of editing, cinematography, acting, directing and other filmmaking tools will be briefly examined.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

### **ECL 113 - Environmental Measurements**

This is a field course in which students will be involved in doing ecological surveys of the Cape Fear region. Collection methods and data compilation will be emphasized throughout the course.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

### **ECO 102 - Economics I**

This course introduces students to the rudiments of economics. The course emphasizes supply and demand analysis, market equilibrium and cost/revenue analysis from the points of view of consumers and the individual firm.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **ECO 104 - Economics II**

This course extends the basics acquired in Economics I into coverage of the economy of an entire country. The course emphasizes national economic measurements, growth cycles, and government policies. Economics examines the monetarist and neo-keynesian debates of economic policy.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **ECO 108 - Consumer Economics**

Students will study the efficient use of family resources with emphasis placed upon money management in the purchasing of shelter, food, transportation, clothing, and insurance. Included will be a study of the productive use of credit and retail sales.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **ECO 150 - Microeconomics**

This course introduces students to the principles of economics. Emphasis is placed on supply and demand analysis, market structures, and cost-revenue analysis from the perspective of the consumer and the individual firm.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

### **ECO 151 - Macroeconomics**

This course examines the basic concepts of a national economy with emphasis on fiscal and monetary policies, measures of economic performance, growth cycles, economic indices, and models.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

### **ECO 200 - Managerial Economics**

Studies the use of accounting, statistical and marketing information available to management to make future-oriented business decisions. The emphasis is on the use of this information to make decisions for the firm such as profit-maximizing production levels, loss minimization and probability budgets

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ECO 102

### **EDU 101 - Introduction to Early Childhood Education: Child Care Credential I**

This course provides the first half of instruction necessary to qualify for the NC Child Care Credential. Areas of study include introduction to the child care profession, child growth and development, and getting to know the whole child.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **EDU 102 - Introduction to Early Childhood Education: Child Care Credential II**

This course provides the second half of instruction necessary to qualify for the NC Child Care Credential. Areas of study include developmentally appropriate practices, positive guidance, and providing a safe and healthy environment.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **EDU 106 - Early Childhood Overview**

This course provides opportunities to investigate the field of early childhood education. Topics include the history of the early childhood movement, qualities and roles of the caregiver, and professional ethics.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **EDU 107 - Early Childhood Principles and Practices**

This course focuses on the components of the early childhood curriculum. Topics include the importance of play in the early childhood environment, developmentally appropriate environments, and various types of early childhood programs/curricula.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **EDU 110 - Seminar Practicum: Preschool Environment**

This supervised practicum experience gives the student an opportunity to apply age-appropriate principles of child development, relationships, and learning in a preschool environment. The seminar gives the student an opportunity to evaluate practical experiences and to discuss curriculum components.

Course Hours Per Week: Class 1, Lab 10.

Quarter Hours Credit: 2.

Prerequisites: EDU 117, EDU 118 or permission from the instructor

### **EDU 117 - Child Growth and Development I**

This course is an introduction to the field of child growth and development. Specific topics will include historical perspectives on children, research and observation techniques, terminology, and the areas of growth and development. Emphasis will be placed on conception, prenatal development, the birth process and the neonate.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **EDU 118 - Child Growth and Development II**

This examines the growth and development of infants through early childhood. Specific emphasis will be placed on factors influencing development in the physical/motor, cognitive/language, and social/emotional areas.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: EDU 117 or permission from the instructor

### **EDU 119 - Child Growth and Development III**

This course will examine the growth and development of middle childhood and adolescence. Specific emphasis will be placed on factors influencing development in physical/motor, cognitive/language, and social emotional areas.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisites: EDU 117, EDU 118 or permission from the instructor

### **EDU 122 - Child Health, Safety, and Nutrition**

This course will introduce the factors influencing a young child's health. Emphasis will be placed on safety precautions and treatment procedures, and nutrition concepts and requirements.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **EDU 125 - Creative Activities in Early Childhood**

This course emphasizes the use of creative activities for children in art, music, movement, and dramatics. Topics include creative learning environments, planning and implementing developmentally appropriate teaching materials for classrooms.

Course Hours Per Week: Class 5, Lab 3.

Quarter Hours Credit: 6.

Prerequisites: EDU 117 and EDU 118 or permission from the instructor

### **EDU 205 - Teaching Methods**

This course is designed to teach the skill necessary in preparing lesson plans and using various methods of instructing other persons.

Course Hours Per Week: Class 1, Lab 2.

Quarter Hours Credit: 2.

Prerequisites: EDU 117, EDU 118



**EDU 211 - Infant/Toddler Development and Activities**

This course emphasizes the skills needed to effectively implement group care for infant/toddlers. Topics include principles of child development, and developmentally appropriate practices.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisites: EDU 117 and EDU 118 or permission from the instructor

**EDU 215 - Behavior Management**

This course presents guidelines for positive child guidance and includes the study of behavior management as an educational tool. Students will explore strategies for guiding behavior using productive and positive techniques.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisites: EDU 118 and EDU 119 or permission from the instructor

**EDU 216 - Communication Activities in Early Childhood**

This course is designed to teach methods of developing communication skills in children. Emphasis will be placed on the basic components of the language arts speaking, listening, writing, and reading (beginnings of literacy), and their interrelatedness.

Course Hours Per Week: Class 5, Lab 3.

Quarter Hours Credit: 6.

Prerequisites: EDU 118 and EDU 119 or permission from the instructor

**EDU 217 - Exploration Activities in Early Childhood**

This course is an introductory study of discovery experiences in science, math, and social studies. Topics will include concepts, facts, phenomena and skills in each area which young children think about, discover, and develop.

Course Hours Per Week: Class 5, Lab 3

Quarter Hours Credit: 6.

Prerequisites: EDU 118 and EDU 119 or permission from the instructor

**EDU 220 - Seminar Practicum: Special Needs Environment**

This supervised practicum experience gives the student an opportunity to apply age-appropriate principles of child development, relationships, and learning in a special needs environment. The seminar gives the student an opportunity to evaluate practical experiences and to discuss curriculum components.

Course Hours Per Week: Class 1, Lab 10.

Quarter Hours Credit: 2.

Prerequisites: EDU 117, EDU 118, EDU 119, EDU 225 or permission from the instructor

**EDU 223 - Working with Child's Family and Community**

This course studies the relationship among the family, and programs for children/school and community. Topics will include study of the family's influence on the child, the interaction between the family and the caregiver/teacher and the role of the caregiver/teacher in assisting families with their children and community resources which serve children and their families.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

**EDU 225 - Working with Children with Special Needs**

This course is an introduction to working with children who have special needs. Topics include identification, causes, assessment, intervention strategies and techniques and support services.

Class Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisites: None

**EDU 231 - Early Childhood Curriculum Planning**

This course reviews major elements of early childhood curriculum planning. Topics include assessments of children and curriculum, instructional planning, scheduling, and environment.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisites: EDU 118 and EDU 119 or permission from the instructor

**EDU 232 - Child Care Administration**

This course presents policy and procedures for operation of group care for children. Topics include principles of supervision, budgeting and funding, relationships with service and regulatory agencies and state licensing guidelines. This course meets the NC Child Day Care Section's requirement of child day care administrators.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisites: EDU 118, EDU 119, EDU 106, EDU 122 or permission from the instructor

**EDU 250 - Teacher, School, and Society**

An introduction to the profession of teaching that acquaints prospective teachers with the diverse roles of teachers. Focuses on the teacher as a decision-maker; careers in education; the social, historical and philosophical foundations of education; governmental and organizational aspects of schools; and current and future trends in American education. Observation skills are developed through field experience.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisites: EDU 117, EDU 118, EDU 119

### ELC 100 - Marine Electricity I

This course is an introduction to basic theories and principles of electricity. Basic electrical units, Ohm's Law, symbols, power sources and electrical measuring instruments in coordination with basic DC series and parallel resistive circuits will be covered. Practical applications will be stressed. This course is not transferable to the Electronics Engineering or Instrumentation Technology curriculums.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

### ELC 101 - Marine Electricity II

This course is a continuation of ELC 100. It will cover an introduction to magnetism, inductance, alternating current, theory, capacitance, reactance phase relationship, AC power and transformers, generators, alternators, and distribution system. Voltage and current regulation along with practical applications will be stressed. This course is not transferable to the Electronics or Instrumentation Technology curriculums.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: ELC 107, or ELC 100, plus proficiency test

### ELC 107 - Electricity I

This fundamental course is an introduction to basic theories and principles of electricity. It includes electrical symbols, electrostatics, Ohm's Law, direct current (DC) circuits, power, power sources (DC), circuit theorems, electrical measuring devices, and an introduction to electromagnetism, capacitance and inductance. Practical applications are highly stressed.

Course Hours Per Week: Class 4, M. Lab 6.

Quarter Hours Credit: 6.

Pre/Corequisite: MAT 121

### ELC 108 - Electricity II

This course is a continuation of ELC 107. It is an introduction to alternating current theory, sine and pulse wave analysis, inductance, capacitance, reactance, phase relationships, AC power, and transformers. Simple power distribution systems are studied.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: ELC 107

Pre/Corequisite: MAT 122

### ELC 109 - Electricity III

This course is a continuation of ELC 108. Topics studied will include RC, RL, RLC circuits and resonance filters. The practical applications of these concepts are highly stressed.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: ELC 108

Pre/Corequisite: MAT 123

### ELM 208 - Control Systems

This course covers the basic principles of electrical, electronic, and pneumatic control systems as related to industrial applications. The basic design and functions of circuits, motors, transducers, and servomechanisms, and a review of the National Electric Code are included.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: PHY 102

### ELN 102 - Electronic Fabrication Techniques

This is a basic course to introduce electronic circuit construction and wiring practices. Topics included are, soldering/desoldering techniques, component layout, and the interpretation of schematic wiring diagrams. The course is structured to increase the students' manipulative skills using common electric handtools.

Course Hours Per Week: Lab 2.

Quarter Hours Credit: 1.

Prerequisite: None

### ELN 106 - Electronics I

This fundamental course covers the application of electronic symbols, on schematic diagrams, and the functional application of test equipment typically used by technicians. It further introduces the student to the basics of semiconductor physics and two-terminal semiconductor devices.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Pre/Corequisites: ELC 107, MAT 121

### ELN 107 - Electronics II

This course is a continuation of ELN 106. It covers the theory and applications of two-terminal semiconductor devices, and bipolar transistor circuits, including biasing methods, small-signal and power amplifier analysis, interstage coupling and feedback.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: ELN 106

Pre/Corequisites: ELC 108, MAT 122

### ELN 108 - Electronics III

This course is a continuation of ELN 107. Topics covered are power supplies and regulators, theory and application of Junction and MOS field effect transistors, multistage amplifiers, feedback methods, oscillators, multistage circuitry, power amplifiers and feedback.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: ELN 107

Pre/Corequisites: ELC 109, MAT 123



## **ELN 121 - Digital Electronics I**

This course deals with Boolean Algebra as applied to digital logic and control devices. Principles of Boolean Algebra, Karnaugh mapping, and various number systems will be examined. Practical circuits using industry standard components will be constructed during laboratory sessions.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: ELN 108

## **ELN 122 - Digital Electronics II**

Basic computer and static control logic circuits will be studied. Discrete components will be used to construct logic circuits and investigate voltage levels, propagation delays and switching speed. Boolean principles relating to each type gate will be investigated.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisites: ELN 108, ELN 121

## **ELN 140 - Introduction to Marine Electronics**

This course is a continuation of ELC 101 emphasizing marine related applications. The course of study includes an introduction to radar, sonar, communications, sound and electromagnetic wave propagation. Common types of equipment, circuits, testing and measuring devices are studied. In all areas study, practical applications are stressed.

Course Hours Per Week: Class 2, Lab 4.

Quarter Hours Credit: 4.

Pre/Corequisite: ELC 101

## **ELN 202 - Communication Electronics**

This course will present basic laws, regulations and operating procedures governing communications in the United States. An in-depth study of solid state device applications in various communication circuits will be conducted. Theory of and special uses for vacuum tubes will be presented.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: ELN 108

## **ELN 205 - Analytic Electronic Troubleshooting**

This course is designed to follow ELN 204. It is an advanced study of analytic techniques for troubleshooting complex electronic systems.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: ELN 204

## **ELN 221 - Microprocessors I**

An in-depth study of integrated circuit logic devices used in microprocessor applications will be conducted. This study will include logic gates, memory devices, arithmetic logic units and input/output ports.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: ELN 122

## **ELN 222 - Microprocessors II**

This course will be a continuation of ELN 221. Logic concepts previously studied will be used in an in-depth investigation of various microprocessors. Current uses of microprocessors in industrial applications will be presented. Applications of both Machine and Assembly Languages will be presented.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: ELN 221

## **ELN 223 - Microprocessor Industrial Control Applications**

Current uses of microprocessors in various industrial control applications will be studied in this course.

Course Hours Per Week: Class 4, M. Lab 8.

Quarter Hours Credit: 6.

Prerequisite: ELN 221

## **ELN 224 - Measurement and Control I**

This course is an introduction to the study of process instrumentation. The need for process control will be control are studied. An overview of the various types of process measurements will be presented. In lab, the students will be introduced to the various types of pressure and electrical calibration methods.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisites: ELN 108, ELN 121, PHY 100, CHM 118

## **ELN 225 - Measurement and Control II**

This course is a study of control theory utilizing electronic and pneumatic instruments. Control loops, electronic, and pneumatic will be studied, constructed, and calibrated for actual "in-service" conditions.

Course Hours Per Week: Class 2, M. Lab 9.

Quarter Hours Credit: 5.

Prerequisite: ELN 224

## **ELN 226 - Measurement and Control III**

This course is a continuation of ELN 225, Measurement and Control II. Emphasis will be placed on current techniques in industrial instrumentation, instrument installations and environmental conditions affecting industrial applications of automated systems. Environmental control utilizing electronic and pneumatic systems will be studied.

Course Hours Per Week: Class 2, M. Lab 9.

Quarter Hours Credit: 5.

Prerequisite: ELN 225

## **ELN 227 - Industrial Motor Control**

This course offers a familiarization of alternating and direct current motors and controls used in industrial applications. Basic alternating and direct current motor theory will be studied. Various types of AC and DC controls will be studied including DC variable speed drives and AC variable frequency drives.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisites: ELN 108, ELN 121, PHY 100

### **ELN 231 - Electronics in Industry**

This course emphasizes theory and application of electronic devices used in industrial monitoring and control applications. It will include solid state devices, basic control concepts, control circuits, transducers, variable speed motor controls, and magnetic amplifiers.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisites: ELN 108, ELN 122

### **ELN 236 - Industrial Field Trips**

This course will consist of field trips to local industries and lectures by instrument technicians and engineers who work with the company.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisites: ELN 108, ELN 121

### **ELN 237 - Introduction to Computer Systems**

This course is designed to present the general concepts of microprocessor organization and structure to the student. Machine and Assembly Language will be introduced.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: ELN 121

Corequisite: ELN 122

### **ELN 240 - Computer Project (Digital)**

This course is designed to provide the student with digital design techniques from concept through construction. Each project selection to be approved by the instructor.

Course Hours Per Week: M. Lab 6.

Quarter Hours Credit: 2.

Prerequisites: ELN 108, ELN 121

### **ELN 244 - Computer Project (Software)**

This course will be oriented toward microprocessor applications.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: ELN 237

### **ELN 260 - Data Communications**

This course will provide the student with a general overview of digital and data communications. The student will be exposed to topics such as the telephone system, data link protocol, fiber optics and satellite communications.

Course Hours Per Week: Class 2.

Quarter Hours Credit: 2.

Prerequisite: ELN 108

### **ELN 261 - Local Area Networks I**

This course is designed to introduce the student to the hardware configuration of a LAN. The student will be required to design and give a presentation on a LAN System.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: ELN 260

### **ELN 262 - Local Area Networks II**

This course will be a continuation of ELN 261. This course will introduce the student to the software involved in setting up a LAN.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: ELN 261

### **ELN 263 - Computer Integrated Manufacturing**

This course serves as an introduction to the subject of computer integrated manufacturing (CIM), and provides a comprehensive survey of technical topics related to CIM.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: ELN 237

### **ELN 270 - Data Communications and Local Area Networks**

This course is designed to present the fundamentals and essential topics prevalent in data communications. The topics will include networks, protocol, interface standards, modems, and error detection.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: ELN 122

### **ELN 271 - Electronics Projects**

This course will take the student through design procedures, prototype, and construction of an electronic system. The project will center around the concept of Total Quality Management and team work. The project will be approved by the instructor.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisites: ELN 122, ELN 205

### **ELN 272 - Programmable Logic Controllers**

This course will provide a comprehensive treatment of hardware and software applications for Programmable controllers. It will present a logical progression of the fundamental concepts of PLC application and programming. It will also discuss the basic components of PLC systems, PLC setup and troubleshooting techniques.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: ELN 122

### **ELN 273 - Computer Integrated Manufacturing and Robotics**

This course will present theory and application of robotics, servomechanisms, transducers, sensors, PLC's and microprocessors. The class will culminate by applying the preceding topics to a Computer Integrated Manufacturing system.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisites: ELN 122, ELN 221, (Programmable Logic Controllers; needs number)



## **ELN 274 - Optical Electronics**

This course will present theory and application of light and electromagnetic waves, dielectric waveguides and optical fibers, electroluminescence, lasers, photodetectors, optical receivers, and optical fiber communication systems.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: ELN 202

## **ENG 070 - Basic English**

This course is designed to increase a student's vocabulary, to give him/her practice in using new words in his/her own writing, to learn dictionary usage, and to identify subjects and verbs in a sentence. The course will cover subject, verbs, and preposition identification, journal writing, response to reading, and simple sentence writing. Vocabulary study will include words and their definitions, homonyms, antonyms, and synonyms of words studied.

Course Hours Per Week: Class 3.

Institutional Hours Credit: 3.

(Does not count toward graduation)

Prerequisite: Placement by entry testing

## **ENG 080 - Basic Communication Skills**

This course is designed to improve the student's basic English skills through work on the fundamentals of grammar and punctuation. Correct usage will be practiced through the writing of journals and the writing of clear and mechanically correct sentences. Further writing will be in response to readings of selected essays.

Course Hours Per Week: Class 5.

Institutional Hours Credit: 5.

(Does not count toward graduation)

Prerequisite: Satisfactory completion of ENG 070 or placement by entry testing

## **ENG 090 - Building English Proficiency Skills**

This course is designed to develop basic grammar and writing skills by reviewing basic rules of grammar with an emphasis on correct usage. It includes subject/verb agreement, punctuation, spelling, verb forms, pronoun reference, and sentence structure. The student will practice simple sentence writing. Laboratory work may be required. Students are required to enroll in ENG 091 upon satisfactory completion of ENG 090.

Course Hours Per Week: Class 5.

Institutional Hours Credit: 5.

(Does not count toward graduation)

Prerequisite: Satisfactory completion of ENG 080 or placement by entry testing

## **ENG 091 - Writing for College**

This course reviews basic rules of grammar and introduces the student to the techniques of writing paragraphs with continued emphasis on sentence structure and paragraph development. Laboratory work may be required.

Course Hours Per Week: Class 5.

Institutional Hours Credit: 5.

(Does not count toward graduation)

Prerequisite: Satisfactory completion of ENG 090 or placement by entry testing

## **ENG 101 - Grammar**

The course is designed to aid the student in the improvement of grammatical self-expression. This approach is functional with emphasis on grammar and sentence structure. It is intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: Placement by entry testing

## **ENG 104 - Reading and Composition**

English 104 is designed to advance the student's skills through the reaction in writing to various reading materials. The course builds vocabulary and dictionary skills as a background for the reading of a variety of materials such as textbooks, newspapers, and imaginative literature. It entails the finding of main ideas, the building of critical and evaluative skills, and gives an awareness of connotative and figurative language seen in the reading of poems, short stories, and a novel.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: Placement by entry testing

## **ENG 105 - Grammar and Composition**

This course is designed to aid the student in the improvement of grammatical self-expression. The approach is functional with emphasis on grammar, diction, sentence structure, and punctuation. It is intended to stimulate students to apply the basic principles of English grammar in their day-to-day situations in industry and social life.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

## **ENG 106 - Grammar and Composition**

This course advances the student from ENG 105's basic mastery of word and sentence skills to include more advanced forms of grammar and usage in their application to written language. More advanced study, such as the uses of subordination, dictionary skills, spelling, and the use of the library to its fullest is included. The course culminates in the writing of a research paper

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: ENG 105

## **ENG 114 - Oral Communication**

This course considers the basic concepts and principles of oral communication in order to help the student improve his speech communication skills. Emphasis is placed on organization of thoughts, listening, audience analysis, visual and audiovisual aids, voice, diction, pronunciation, projection, and attitude. Students will learn techniques to improve speech habits and mannerisms, and will produce poised, confident, effective oral presentations.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **ENG 151 - English Composition I**

This course is an introduction to composition at the college level. Although it is designed for the student who already meets the basic competencies in the areas of sentence sense and basic grammar, a review of grammar, usage, and diction is included. The student practices techniques of invention, development, organization, editing, and revision. The course introduces the processes of writing and the structuring of paragraphs. Emphasis is placed on learning the modes of narration, exposition, description, and argumentation. Frequent writings are required.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: Evidence of competence on the Reading and English Placement Tests or a grade of satisfactory in RED 090 and ENG 091.

### **ENG 152 - English Composition II**

This course, a continuation of English 151, will present the basic writing processes and techniques needed to produce effective essays. Through reading and reacting to printed techniques needed to produce effective essays. Through reading and reacting to printed and other materials, the student develops thinking skills which will be applied to the construction of themes and a research paper. Basic techniques of research and documentation such as notetaking, summarizing, critiquing, and quoting are studied.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ENG 151

### **ENG 155 - Technical and Business Writing**

This writing for business and industry instructs students in creating informal and formal reports, business letters, memos, applications and resumes. Emphasis is placed on style, form, and organization. The course includes research techniques and graphic aids in the formal report and is adaptable to the student's major field of study. This course may be computer instructed.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ENG 151

### **ENG 160 - Introduction to Literature**

As an introduction to literature through study of the genres of drama, poetry, and the short story, the student studies plot, characterization, figurative and symbolic language, form, and theme. Interpretation of literary works will be emphasized, and a number of interpretive paragraphs and themes will be written.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ENG 152

### **ENG 207 - Poetry Writing**

This course will cover instruction in writing poetry. It includes criticism and class discussion of original poems by students, practice in various verse form and development of the student's individual abilities.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ENG 151

### **ENG 250 - Folklore**

This course on contemporary folklore will place emphasis on folklore as an informal cultural process rather than as a particular type of cultural expression. The various genres of folklore will be studied as well as their methods of transmission. Students will participate in a folklore field work project in which they will gain hands-on experience in the collection of folklore.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ENG 151

### **ENG 251 - Great British Writers I**

This course studies significant British poetry and prose from Chaucer to the late 1700's. A number of themes, readings, and interpretive assignments are given.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ENG 152

### **ENG 252 - Great British Writers II**

This course surveys major British poetry and prose writers from the Romantic period to the present century. A number of readings, themes, and interpretive assignments are given.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ENG 152

### **ENG 263 - Great American Writers I**

This course studies major American poetry and prose writers from Colonial American through the Romantic era. A number of reading, themes, and interpretive assignments are given.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ENG 152

### **ENG 264 - Great American Writers II**

Major American writers and poets from the middle of the nineteenth century through the middle of the twentieth century are studied. A number of readings, themes, and interpretive assignments are given.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ENG 152



## **ENG 275 - World Literature I**

Masterpieces of world literature from ancient times through the Middle Ages are studied. A number of readings, themes, and interpretive assignments are given.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ENG 152

## **ENG 276 - World Literature II**

This course studies masterpieces of world literature from the Renaissance into the twentieth century. A number of readings, themes, and interpretive assignments are given.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: ENG 152

## **FRE 150 - French I**

This is the first of a three-part course. Mastery of elementary communication skills (vocabulary, grammar, idiomatic expressions, informational phrases, some cultural content) will be targeted through oral and written work, quizzes, daily preparation assignments, written homework, compositions, readings and aural comprehension.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **FRE 151 - French II**

This is the second of a three-part course. Mastery of elementary communication skills will be targeted through oral and written work, quizzes, daily preparation assignments, written homework, compositions, readings and aural comprehension.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: FRE 150

## **FRE 152 - French III**

This completes the three-part course. Mastery of elementary communication skills is targeted through oral and written work, quizzes, daily preparation assignments, written homework, compositions, readings and aural comprehension.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: FRE 151

## **GEL 101 - Marine Geology**

A study of major topographical features of the ocean floor will be undertaken in this course. Included will be coverage of continental drift, sea floor spreading, plate tectonics, seismology, sedimentation, paleontology, mineralogy, and petrology as these pertain to the ocean.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

## **GEL 102 - Geology of the Oceans**

This is an introductory course in marine geology. Recent discoveries concerning the ocean floor are discussed in this lecture course. Modern theories of plate tectonics and sea floor spreading are presented by lecture and film. Sediment samples, rocks and minerals collected on recent CFCC cruises are shown and discussed as they relate to the modern concepts of marine geology.

Course Hours Per Week: Class 4.

Quarter Hours Credit: 4.

Prerequisite: None

## **GEO 150 - Introduction to Physical Geography**

This course will cover maps and map projections and their uses as well as analysis of the spatial distribution and character of environmental elements, including climate, land forms, vegetation, and soils.

Course Hours Per Week: Class 4, Lab 4.

Quarter Hours Credit: 6.

Prerequisite: None

## **HIS 150 - Western Civilization I**

This course traces the history of Western Civilization from its near Eastern, Grecian, and Roman origins through the Middle Ages. It concludes with coverage of the Renaissance and Reformation periods.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **HIS 151 - Western Civilization II**

This course is a continuation of Western Civilization I. It begins with the Absolutism of the Seventeenth Century and covers the rise of constitutionalism, emerging industrialism and nationalism of the nineteenth century, and concludes with the development of modern day economic, cultural, and political life.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **HIS 250 - American History I**

This is a survey course designed to cover the history of the United States from the pre-colonial period to Reconstruction in the aftermath of the Civil War. Emphasis is placed on the social, cultural, and economic developments of the republic.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **HIS 251 - American History II**

This course is a continuation of American History I and is a survey of the history of the United States from the period of Reconstruction to the present with emphasis on the rise of the United States as a world power.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

### **HRM 101 - Introduction to the Hospitality Industry**

This course provides a basic understanding of the lodging and food service industry by tracing the industry's growth and development, reviewing the organization of hotel and food and beverage operations, and by focusing on industry opportunities and future trends.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **HRM 102 - Tourism and the Hospitality Industry**

This course is designed to provide students with a basic knowledge of tourism-related concepts and with the kind of practical experience which will enable them to effectively apply those concepts to the hospitality industry.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: HRM 101

### **HRM 107 - Organization and Administration**

This course analyzes management's functions and responsibilities in such areas as administration, organization, communications, accounting, marketing, and human relations.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **HRM 115 - Hospitality Energy and Water Management**

Energy and water problems and their impact on the hospitality industry are explained. The course also provides a practical approach to the development and implementation of an energy and water management program.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: HRM 101

### **HRM 120 - Hospitality Industry Training**

This course uses real-life scenarios and case studies to prepare students to train hospitality personnel.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: HRM 101

### **HRM 124 - Managerial Accounting for the Hospitality Industry**

This course presents managerial accounting concepts and explains how they apply to specific operations within the hospitality industry.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: ACC 122

### **HRM 133 - Front Office Procedures**

This course presents a systematic approach to front office procedures by detailing the flow of business through a hotel, beginning with the reservation process and ending with check-out and settlement. The course also examines the various elements of effective front office management, paying particular attention to planning and evaluating front office operations and to personnel management. Front office procedures and management are placed within the context of the overall operation of a hotel.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: HRM 101

### **HRM 137 - Food and Beverage Management**

A course providing a basic understanding of the principles of food production and service management, reviewing sanitation, menu planning, purchasing, storage, and beverage management.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: HRM 101

### **HRM 138 - Food Production Principles**

The techniques and procedures of quality and quantity food production are explained in this course. Principles underlying the selection, composition, and preparation of the major food products are included, as well as an extensive set of basic and complex recipes for practice.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisites: HRM 137 and HRM 143

### **HRM 143 - Basic Sanitation**

The course outlines how to effectively manage sanitation to achieve high standards that will keep customers coming back.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: HRM 101

### **HRM 201 - Hotel/Motel Security Management**

The issues surrounding the need for individualized security programs are explained. A wide variety of security and safety equipment and procedures are examined, guest protection and internal security for asset protection are discussed, and OSHA regulations that apply to lodging properties are outlined.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: HRM 101

### **HRM 202 - Convention Management and Service**

This course defines the scope and segmentation of the convention and group business market, describes marketing and sales strategies to attract markets with specific needs, and explains techniques to meet those needs as part of meeting and convention service.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: HRM 222



### **HRM 203 - Hospitality Industry Engineering Systems**

This course presents information and principles important to both the managerial and technical functioning of the engineering/maintenance department, stressing the knowledge needed by managers at all levels in order for them to make appropriate and cost-effective decisions.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: HRM 101

### **HRM 205 - Hospitality Law**

This course gives students an introduction to the legal aspects of hotel and restaurant operations.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: HRM 101

### **HRM 222 - Marketing of Hospitality Services**

This course is designed to provide students with basic knowledge and practical experience which will enable them to develop strategic marketing plans for hotel/motel properties.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: HRM 101

### **HRM 223 - Hotel/Motel Sales Promotion**

Students will be provided with a solid background in hospitality sales and advertising. Although marketing concepts are also discussed, the emphasis is on practical sales techniques, proven approaches to selling to targeted markets, and advertising's role in sales.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: HRM 222

### **HRM 224 - Quality Control**

This course introduces the student to problem solving skills that will enable the performance of quality assurance strategies for the particular challenges of quality control in the hospitality service industry.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: Completion of 15 hours of HRM courses or permission of the instructor

### **HRM 239 - Housekeeping Management**

This course teaches students the basic principles of effective housekeeping management.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: HRM 107

### **HRM 240 - Hospitality Human Resources Management**

This course presents a systematic approach to human resources management in the hospitality industry.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **HRM 241 - Food and Beverage Controls**

Principles and procedures involved in an effective food and beverage control system are covered. Also included are standards determination, the operating budget, income and cost control, menu pricing, and computer applications.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisites: HRM 137, ACC 120

### **HRM 243 - Hospitality Purchasing Management**

This course describes how to develop and implement an effective purchasing program. It focuses on issues pertaining to supplier relations and selection, negotiation, and evaluation. It includes in-depth material regarding major categories of purchases.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: ACC 122

### **HRM 245 - Food and Beverage Service**

This course provides students with practical skills and knowledge for effective management of food and beverage service in outlets ranging from cafeterias and coffee shops to room service, banquet areas, and high check-average dining rooms. Basic service principles are presented with an emphasis on the special needs of guests.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: HRM 137 and HRM 143

### **HRM 246 - Hospitality Management Problems**

This course exposes the student to current issues in Hospitality Management, through industry professional resources such as periodicals and journals. The course will be conducted in a seminar format.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **HRM 248 - Hospitality Industry Computer Systems**

This course provides an overview of the information needs of lodging properties and food service establishments. It addresses essential aspects of computer systems, such as hardware, software, and generic applications. Focus is on computer-based property management systems for both front office and back office functions and computer-based restaurant management systems for both service-oriented and management oriented functions.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: HRM 101

**HYD 235 - Hydraulics and Pneumatics**

This course is an engineering study of basic fluid power transmission systems. Topics covered include: flow measurement, pressure, flow control, types of actuators, power delivery, piping, pump types, energy storage in accumulators, and compressed air systems. Emphasis throughout the course is placed on the application of basic physics principles to the design of fluid power systems.

Course Hours Per Week: Class 3, M. Lab 3.

Quarter Hours Credit: 4.

Prerequisite: PHY 102 or PHY 105

**ISC 101 - Industrial Safety**

This course addresses safety as set forth by OSHA standards and its application to industry in general. The student will work with OSHA manuals and explore simulated safety violations and discuss possible solutions. The objective is for the student to become familiar with OSHA and general safety standards to the extent that they might reasonably interpret and execute them given the occasion.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

**ISC 102 - Quality Control in Manufacturing**

This course is designed to train the student in inspection methods which are consistent with a modern manufacturing facility. Inspection procedures ranging from basic measurement to statistical process control and geometric dimensioning and tolerancing will be studied thoroughly.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: MEC 105 or instructor's permission

**ISC 202 - Quality Control and Statistics**

This course is a study of the principles and techniques of quality control and cost savings; organization and procedure for efficient quality control; functions; responsibilities, structures, costs, reports, personnel, and vendor-customer relationships in quality control; sampling inspection, process control, and tests for significance.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

**ISC 204 - Industrial Management**

This course is a survey of the history of modern management and the various functions which the manager of a modern industrial enterprise must perform. It includes a study of the various departments that assist the manager in carrying out his responsibilities.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**LEX 101 - Introduction to Paralegalism**

This course covers the objectives of the paralegal program, the legal vocabulary, the descriptions of various paralegal jobs, professional ethics, and professional organizations.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

**LEX 104 - Investigations**

In-depth study of investigating criminal cases, interviews, taking statements, collecting data, and the orderly assemblage for the attorney's use. This course includes locating and interviewing witnesses, including expert witnesses, investigating crime scene sketching, evaluating evidence and determining its sufficiency and admissibility with regard to the 4th, 5th, and 6th Amendments.

N.C.G.S. Chapter 15A on Criminal Procedure is discussed.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

**LEX 111 - Legal Writing**

Continuation of Legal Research and Bibliography course where paralegal student, having mastered basic techniques of legal research, now must utilize results of research in the form of legal writing. This course will emphasize those areas of legal writing where a paralegal may be called upon to employ. Basically we will work on legal memorandums, both intra-office and legal, as well as letter writing and brief writing.

Course Hours Per Week: Class 1, Lab 2.

Quarter Hours Credit: 2.

Prerequisite: LEX 132

**LEX 113 - Family Law**

The purpose of this course is to train paralegals to handle competently separations, divorces, annulments, adoptions, and bastardy proceedings from initial interview through data collection and drafting of instruments, giving notice, filing and serving documents, and setting hearing dates to final disposition.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: LEX 115 or BUS 115

**LEX 114 - Property I**

This course is a study in ownership of interest in land, of land transfers, in whole and in part, absolute and conditional, present and future; of retained powers of ownership; and of the documents and procedures necessary to establish interest in land.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: LEX 115 or BUS 115



## **LEX 115 - Commercial Law I**

An introduction course for those majoring in the Paralegal Technology curriculum. The course will involve an introduction to the law, a discussion of the law of contracts, and business organizations. The course will include hands-on experience in drafting of contracts.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **LEX 116 - Commercial Law II**

A continuation from Commercial Law I for paralegals with emphasis on the Uniform Commercial Code, personal property and bailment, and agency and employment. The course will include exposure to commercial instruments and drafting business documents.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: LEX 115 or BUS 115

## **LEX 117 - Torts and Litigation Preparation**

This course considers the broad problem of personal injury and disability and the legal response to that law. Negligence, strict liability, intentional torts, rules of civil procedure preparation, pleadings, motions, order, discovery materials and post-judgment remedies are covered in great detail.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: LEX 135

## **LEX 132 - Legal Research/Bibliography**

This course introduces the student to the proper methods of utilizing legal research material. The student will study the preparation of legal memoranda and trial briefs. The course will introduce the student to the law library and how to select and order material for the library.

Course Hours Per Week: Class 4, Lab 6.

Quarter Hours Credit: 7.

Prerequisite: None

## **LEX 135 - Legal Systems**

This course is a study of the jurisdiction of state and federal courts; the acquisition of jurisdiction over parties and subject matter; venue; pleadings and related problems under the North Carolina and Federal Civil Rules of Procedure; real party in interest; splittings of actions; joinder of parties and causes of action; special joinder devices; and forms of pleadings and motions.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **LEX 205 - Constitutional Law**

A case study course showing the development of the application of the Federal Constitution to both criminal and civil law and a historic development of Constitutional Law.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **LEX 208 - Administrative Law**

This course involves study of various administrative agencies and procedures, including Social Security, Social Services, Veteran's Administration, Industrial Commission and Employment Security Commission.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: LEX 135

## **LEX 215 - Property II: Title Search**

This course includes the study of the preparation of simple contracts for sale of real estate; examination of title; preparing simple titles; and role of judgements and estates in the determination of marketability of real estate title; the study and function of various documents, indices and files on public records in various county offices. Forms for abstracting title information from public records, summaries thereof, and various typical problems and errors which may render a title unmarketable are included.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: LEX 114

## **LEX 216 - Property III: Loan Closings**

This is a continuation of Property II: Title Searching. The course addresses the preparation of closing document in connection with loans. The student is allowed extensive hands-on experience in preparing and drafting all documents relating to conventional, VA, FHA, and other loans.

Course Hours Per Week: Class 1, Lab 2.

Quarter Hours Credit: 2.

Prerequisite: LEX 215

## **LEX 219 - Computerized Legal Research**

This course is designed to advance the student's skill of legal research by use of the computer access terminal. Students will be taught methods, procedure and proper use of the computer as a research aid.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: LEX 132

## **LEX 224 - Wills**

This course covers the probate and administration of wills. The topics of study include the operation and revocation of wills, descent and distribution in case of intestacy, construction of trust agreements, and the transfer of estate assets.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

## **LEX 230 - Bankruptcy and Collection**

This course will introduce the student to the Bankruptcy Law. The student will understand the operation of the bankruptcy court and will be exposed to the techniques of debt collection and attachment.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: LEX 135

### LEX 231 - Law Office Management I

This course is designed to introduce the student to the law office as a business operation. It is to help the student understand the various functions of the personnel within the office, the organization and design of the office and systems that promote efficient and proper operation of the law office.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### MAT 090 - Developmental Mathematics

This course is designed to provide the student with the fundamental concepts needed to undertake the mathematical sequences in the technical curricula. Topics include operations on whole numbers, prime numbers, multipliers and factors, powers and roots of whole numbers. Also included are operations on fractions and decimals, percentages, operations on the real number line, and geometry fundamentals.

Course Hours Per Week: Class 3.

Institutional Hours Credit: 3.

(Does not apply toward graduation)

Prerequisite: None

### MAT 099 - Beginning Algebra

This course covers the fundamentals of high school Algebra I. It is designed to qualify a student for admission into curricula having high school Algebra I as an admission requirement. It is also recommended for those students wanting an Algebra I review in preparation for starting the technical mathematics sequence.

Course Hours Per Week: Class 5.

Institutional Hours Credit: 5.

(Does not apply toward graduation)

Prerequisite: None

### MAT 100 - Intermediate Algebra

This course covers the fundamentals of Algebra II. It is designed as the developmental course for college algebra to sharpen the student's skills in algebra. It is also designed to provide an introduction to algebraic operations to students without a sufficient background in algebra. It is recommended for those students needing an algebra review in preparation for their respective mathematics courses in their program.

Course Hours Per Week: Class 5.

Institutional Hours Credit: 5.

(Does not apply toward graduation)

Prerequisite: Approved cut-off score in the Placement Test

### MAT 101 - Fundamentals of Math I

The first of a two course sequence. Students will study the principles of whole numbers, fractions and decimals. Also included will be ratios and proportions, percentages, and dimensional analysis.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: Entrance Test qualification or instructor's permission

### MAT 102 - Fundamentals of Math II

The second of the sequence dealing with powers and roots, algebraic expression and formulas and an introduction to geometry which includes practical problems to solve area, volume and linear measurements.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 101

### MAT 104 - Machinist Mathematics I

This course is designed to acquaint the machinist with the mathematical tools most useful to the trade. The areas of Metric Measurement, Ratio and Proportion, Basic Trigonometry, and Fundamental Geometry are utilized in the light of practical machine trade problems.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 102

### MAT 105 - Machinist Mathematics II

This is the second course of the sequence dealing mainly with practical machine shop trigonometry problems. Right angle trig applicable to calculating bolt circle hole locations, dovetail slot size dimensions, angular measurement with sine bar, and tapers on a lathe. The laws of sine and cosine will be covered so oblique triangles can be calculated. These math skills are essential on conventional machine tools as well as Computer Numerical Control tools, which use coordinate point locations to cut angles, chamfers and arcs.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 104

### MAT 121 - Technical Mathematics

This introductory algebra course is the first in a three course sequence. The topics of study are operations with real numbers, introduction to exponents and radicals, operations with algebraic expressions, algebraic fractions, and solving first degree equations.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: High school Algebra I or equivalent and appropriate cut-off score on the admission testing requirement

### MAT 122 - Technical Mathematics

This course is the second in a three-course sequence. The topics of study are variation, graphing of functions, introduction to trigonometry and applications to right triangle solution, vectors, exponents and radicals, and exponential and logarithmic functions. Application of these topics in technical areas of study will be stressed.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 121 or equivalent



### **MAT 123 - Technical Mathematics**

This course is the third in a three-course sequence. The topics of study are systems of equations in quadratic equations, trigonometric graphs and polar coordinates, trigonometric formulas and equations, and solving oblique triangles.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 122 or equivalent

### **MAT 150 - College Mathematics I**

A survey course designed to meet the basic studies requirement in mathematics. The purpose of the course is to describe the nature of mathematics through content not ordinarily encountered in the high school curriculum. The course is not intended as preparation for further mathematics courses other than MAT 151. Topics will be chosen from logic, number patterns and systems, algebra, geometry, probability, statistics, calculus, finance and the historical development of mathematics with emphasis being placed on problem solving and the application of these topics in today's society. Some topics will require students to do calculations using a scientific calculator.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: Entrance Test qualification in Reading and Mathematics

### **MAT 151 - College Mathematics II**

A continuation of the topics begun in Mathematics 150. Emphasis will be placed on how these topics are used in the real world. Topics will be chosen from among those listed in the description for MAT 150. Some topics will require students to do calculations using a scientific calculator.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 150

### **MAT 160 - College Algebra**

A study of sets; linear, quadratic, polynomial, rational, exponential, and logarithmic functions; solution of equations and inequalities; permutations and combinations; the binomial theorem; and mathematical induction.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: Entrance Test qualification, or MAT 100

### **MAT 161 - College Trigonometry**

A study of the definitions and interpretation of the trigonometric functions, including related concepts and applications. Topics include trigonometric identities, graphs of trigonometric functions and their inverse relations, trigonometric equations, triangle solution, vectors, and selected algebra topics.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 160

### **MAT 165 - Introduction to Statistics**

An introductory study of statistical methods, including organization and presentation of data, probability, probability distributions, hypothesis testing, and confidence intervals. Emphasis will be on computational procedures and applications rather than theoretical development.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 160

### **MAT 190 - Precalculus**

A comprehensive course in precalculus mathematics includes the fundamental concepts of real numbers and functions including polynomial and rational functions, exponential and logarithmic functions and trigonometric functions. Analytic trigonometry including trigonometric identities and equations are developed. Application of these concepts to practical situations is stressed.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 123 or equivalent

### **MAT 211 - Basic Statistics**

This introductory course of statistics allows the student to identify and be able to work with statistical descriptions, probability distributions, special distributions, sampling distributions, estimations of population proportion, test concerning population proportions, inferences concerning population mean and additional topics selected from the following: inferences concerning differences of two population means, inferences concerning population variances, Chi-square, regression and correlation, analysis of variance, nonparametric methods, survey sampling, quality control, Bayesian methods, and decision theory.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 122

### **MAT 212 - Industrial Statistics**

This course a basic framework of statistical concepts for analyzing manufacturing and industrial processes. Topics include: Data collection, organization and presentation; calculation of central tendency; variation and probability in sampling; statistical process control and preparing and analyzing control charts for various quality characteristics. Emphasis is given to industrial quality control techniques and applications.

Course Hours Per Week: Class 4.

Quarter Hours Credit: 4.

Prerequisite: MAT 122

### **MAT 250 - Calculus I**

The fundamental concepts of analytic geometry, differential, and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivative, differentials, rate of change, integrals, and basic integration techniques. Application of these concepts to practical situations is stressed.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 161 or MAT 190

**MAT 251 - Calculus II**

A continuation of MAT 250. Topics included are applications of integration to velocity and acceleration problems, area between curves, volume, and work by a variable force. Also included are derivatives of trigonometric, inverse trigonometric, exponential and logarithmic functions, integration of exponential and logarithmic functions, techniques of integration by parts, and the use of tables of integrals. Emphasis is placed on application of these techniques to physical problems.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 250

**MEC 103 - Machining Technology I**

Students will be introduced to the history and job opportunities in the Machinist field. Identification and use of handtools and precision measuring instruments, along with processes and safety procedures on engine lathes, drill presses, milling machines and pedestal grinders will be included. Elementary layout procedures will also be covered.

Course Hours Per Week: Class 5, M. Lab 12.

Quarter Hours Credit: 9.

Prerequisite: None

**MEC 104 - Machining Technology II**

This course will deal with machining processes. Closer tolerances on class projects will require students to place more emphasis on quality. Precision layout, surface and cylindrical grinding will be introduced. The effects of workpiece and cutting tool materials in relation to cutting speeds, feeds, and surface finish will be covered. Equipment nomenclature and safety will be included.

Course Hours Per Week: Class 3, M. Lab 15.

Quarter Hours Credit: 8.

Prerequisite: MEC 103 or permission of instructor

**MEC 105 - Machining Technology III**

Students will expand their knowledge of previously used machining and layout processes. Internal machining operations will be introduced. The production of screw threads and the calculations required will be covered. Angular machining on mills, lathes and grinding machines will be studied and practiced. Students will be introduced to Quality Control inspection, cutter grinder operations, gear cutting and calculations. Students will apply production machining while maintaining quality. Safety in the workplace will be stressed.

Course Hours Per Week: Class 3, M. Lab 15.

Quarter Hours Credit: 8.

Prerequisite: MEC 104 or permission of instructor

**MEC 106 - Machining Technology IV**

This course will cover the production of a class project from start to finish. Students will be required to use all previous information and knowledge. Project will start with detail and assembly drawings. Students will process and manufacture parts to specifications, inspect and assemble project. Emphasis will be placed on accuracy, workforce participation and trouble shooting. Safety procedures will be observed at all times. Heat treating of steel and steel alloys and its effects on tolerances and stock allowances will be covered.

Course Hours Per Week: Class 3, M. Lab 15.

Quarter Hours Credit: 8.

Prerequisite: MEC 105 or permission of instructor

**MEC 107 - Machining Center Programming and Operation**

This is a course of study designed to train the student in the manual programming methods of modern Computer Numerical Control (CNC) machining centers. The history and types of numerical control machine tools, as well as the programming, setup and operation of modern CNC machining centers will be thoroughly studied. Manual programming utilizing standard "G" and "M" code programming formats (RS274D format) will be emphasized. This course is taught with a "hands on" perspective allowing the student to gain actual experience "the machine".

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: MEC 104 or permission of instructor

**MEC 108 - Turning Center Programming and Operation**

This is a course of study designed to train the student in the manual programming, set up, and operation methods of a Computer Numerical Controlled (CNC) turning center. Students will learn procedures necessary to manufacture parts beginning with a blueprint, writing a computer program using standard RS274D programming format, machine tool setup, and finally part and program debugging. Methods employed are consistent with modern industry and is taught from a "hands on" perspective.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: MEC 107 or permission of instructor

**MEC 121 - Industrial Methods I**

Students will be introduced to basic shop hand tools and instructed in their proper use and care. The drill press and its accessories will be demonstrated and the student will be required to complete shop projects as assigned by the instructor. Safety will be stressed throughout the course.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: None



### **MEC 122 - Industrial Methods II**

The lathe, milling machine, and all accessory tools will be introduced to the student. Emphasis will be placed on the machines limits and abilities. Safety rules will be stressed for each machine. Appropriate projects will be assigned by the instructor.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: MEC 121

### **MEC 123 - Introduction to CAD-CAM**

Students will study simple part programs for Computerized Numerical Controlled (CNC) machine tools, and be introduced to Computer Aided Design and Computer Aided Manufacturing (CAD-CAM) as used in industry.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: MEC 122

### **MEC 201 - Machining Technology V**

This course will deal with advanced grinding processes and metallurgy. Internal grinding requiring students to form dress abrasive wheels will be introduced. The selection and identification of steel, steel alloys and non-ferrous materials used in manufacturing along with their properties and strengths will be emphasized. Expanded studies of heat treatments and hardness measuring instruments that will be covered.

Course Hours Per Week: Class 1, M. Lab 9.

Quarter Hours Credit: 4.

Prerequisite: MEC 106 or permission of instructor

### **MEC 202 - Advanced Turning Center Programming and Operation**

This course will concentrate on advance programming and operation of modern turning centers. Complex parts programs using standard RS274D format will be studied in depth. Internal threading, external threading, multiple repetitive cycles and circular interpolation are some of the programming techniques that will be covered. Various operational techniques will be included.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: MEC 108 or permission of instructor

### **MEC 203 - Advanced Machining Center Programming and Operation**

This course concentrates on advanced programming techniques for Computer Numerical Control (CNC) milling operations. Complex multipart programs will be developed using standard RS274D format code. Helical interpolation, mirror image, cutter compensation and zero shift are some of the programming topics that will included. Auxiliary functions and feed functions will be studied in depth.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: MEC 107 or permission of instructor

### **MEC 204 - Jigs and Fixtures I**

This course is a study in the fundamental principles and uses of jigs and fixtures. The various types of jigs and fixtures and their identification will be studied. Processes of designing and manufacturing simple jigs and fixtures will also be covered.

Course Hours Per Week: Class 2, M. Lab 9.

Quarter Hours Credit: 5.

Prerequisite: MEC 106 or permission of instructor

### **MEC 205 - Strength of Materials**

This course is a continuation of PHY 106, Applied Mechanics. It is the study of stress and strain as they relate to structural design. The areas of force analysis of structures, friction, equilibrium, stress, and strain are covered in as much detail as time will permit.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: MAT 123, PHY 106

### **MEC 206 - Computer Aided Manufacturing I**

This course is a study of computer aided manufacturing using the latest in microcomputer technology. Computer Aided Design (CAD) and Computer Aided Machining (CAM) software will be linked together to generate the numerical code necessary to machine complex parts on CNC machine tools. Each student will utilize the CAD/CAM system to manufacture a variety of parts on CNC turning centers and CNC milling machines. Complete documentation of each job setup and related materials.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: MEC 106

### **MEC 207 - Manufacturing Processes**

The newer concepts of work handling, automatic machining processes, chipless production, new techniques in metal forming, analysis of high-energy forming, ultrasonic machining, electrolytic metal removal, chemical milling, numerical control system, and production methods in manufacturing are covered.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: MEC 123

### **MEC 208 - Computer Aided Manufacturing II**

This course is a continuation of MEC 221 in which advanced CAD/CAM technology will be introduced. Complex parts will be manufactured in an industrial production environment with emphasis placed on cycle time and profitability of the machining process.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: MEC 206

**MEC 209 - Introduction to Metallurgy**

This is an introductory course which will describe the properties of ferrous and nonferrous metals as they apply to industrial applications. Metallurgical theory and practice will be studied to include the physical structure and composition of steel, the making, shaping, and treatment of steel and alloy steel as well as alloys of the common nonferrous metals to include light metals, copper, nickel and the refractory metals.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

**MEC 210 - Jigs and Fixtures II**

Students will put into practice the theory that was emphasized in Jigs and Fixtures I. Emphasis will be placed on the manufacture of jigs and fixtures to precise tolerances in the most economical manner possible.

Course Hours Per Week: Class 2, M. Lab 9.

Quarter Hours Credit: 5.

Prerequisite: MEC 204

**MEC 216 - Industrial Materials**

Proper knowledge of all types of industrial materials is essential to successful decision-making and problem-solving. This introductory course investigates the basic materials in industry. Electrical and physical properties of materials, mechanical characteristics of materials, water and steam, industrial gases, ceramic materials, cements and concretes, and metals are studied.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**MEC 220 - Computer Integrated Manufacturing**

This course is intended to be an introduction to Computer Integrated Manufacturing. CIM technology is covered in terms of hardware, components, data structures, programming and other individual tools used in the CIM environment. CIM will be viewed as a management philosophy.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: ATR 201, CAS 106

**MKT 232 - Sales Development**

This course is a study of retail, wholesale and specialty selling. Emphasis is placed upon mastering and applying the fundamentals of selling. Preparation for and execution of sales demonstrations is required.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

**MKT 239 - Marketing**

This course presents the marketing structure within the framework of the U.S. economic system. The course includes the movement of goods from producer to consumer through channels of distribution, pricing strategies, consumer behavior and market segmentation.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**MRE 100 - Orientation to Health Care Professions**

Upon satisfactory completion of the tasks for Orientation to Health Care Professions, the student will demonstrate knowledge of: the basic concepts relative to duties and educational requirements of health care practitioners with emphasis on the health information technician; the functions of health information department, specifying various employment opportunities and correlating activities for the health information professional in various health care settings; other allied health professionals, matching each to their related departments; each departments interaction in providing quality health care in various health care facilities; the history of medicine and the health record; the history and structure of the American Health Information Management Association (AHIMA); the characteristics of a professional; new trends in the health care delivery system and identifies different health agencies and their purpose.

Course Hours Per Week: Class 2.

Quarter Hours Credit: 2.

Prerequisite: Admission to Health Information Technology program or approval of program director or faculty member.

**MRE 101 - Medical Terminology and Vocabulary I**

Upon satisfactory completion of the tasks in Medical Terminology and Vocabulary I, the student will demonstrate knowledge of: origin and development of word roots, prefixes and suffixes; correlation and usage of medical word components as proper medical terminology; spelling and pronunciation of medical terms; diseases and conditions and operative and special procedural terms; basic human anatomy; positional and directional terms and planes of the body; basic knowledge of the major specialties and subspecialties in the medical field and the terminology and vocabulary associated with each.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: BIO 121

**MRE 102 - Medical Terminology and Vocabulary II**

Upon satisfactory completion of the tasks in Medical Terminology and Vocabulary II, the student will demonstrate knowledge of: the names, locations and functions of major organs and body parts; terminology used to describe various pathological conditions affecting body systems studied; analyzes and uses word roots, prefixes and suffixes describing anatomy and physiology and pathology of body systems studied; major specialties and subspecialties in the medical field and the terminology and vocabulary associated with each.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: MRE 101



### **MRE 103 - Medical Terminology and Vocabulary III**

Upon satisfactory completion of the tasks in Medical Terminology and Vocabulary III, the student will demonstrate knowledge of: the names, locations and functions of other major organs and body parts. Learns terminology used to describe various pathological conditions affecting other body systems studied; analyzing and using of word roots, prefixes and suffixes describing anatomy and physiology and pathology of body systems studied; other specialties and subspecialties in the medical field and the terminology and vocabulary associated with each; terminology and application of these terms to diagnostic and therapeutic specialties and subspecialties of medicine; application and usage of terminology and vocabulary relative to medical research and publication.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: MRE 102

### **MRE 104 - Health Information Content and Maintenance**

Upon satisfactory completion of the tasks for Health Information Content and Maintenance, the student will demonstrate knowledge of: the development and management of the health record. Opportunities are provided to acquire basic knowledge, skills and attitudes in areas of health information services relative to various numbering and filing systems, storage and retrieval methods, basic formats of the health record and the importance, content and uses of forms contained in the health record. The assembly and quantitative analysis of records is incorporated. Also learns the responsibilities of supervision in the health information department.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: BIO 250, MRE 100, MRE 101

Corequisite: MRE 102

### **MRE 105 - Legal and Ethical Aspects of Health Information**

Upon satisfactory completion of the tasks for Legal and Ethical Aspects of Health Information, the student will demonstrate knowledge of: the jurisdictions of federal and state courts; development of legislative and case laws as they relate to changes in social mores; regulations and standards of nongovernmental bodies which affect health information; property rights and ownership of the health record; the health record as a legal document; content, authorization and release of health information; statutes and hospital policies that govern the use of health information, current legislation affecting the health information practitioner.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisites: MRE 102, MRE 104, BIO 251

Corequisites: MRE 103, MRE 106, BIO 124

### **MRE 106 - Health Information Standards and Regulations**

Upon satisfactory completion of the tasks for Health Information Standards and Regulations, the student will demonstrate knowledge of: the major accrediting and licensing agencies and purposes of each; the role of Joint Commission on Accreditation of hospital Organizations for acute care, long term care and ambulatory care facilities; basic standards and regulations for various health care departments with emphasis on health information services.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisites: MRE 102, MRE 104, BIO 251

Corequisites: MRE 103, MRE 105, BIO 124

### **MRE 107 - Health Information Statistics**

Upon satisfactory completion of the tasks for Health Information Statistics, the student will demonstrate knowledge of: methods of computing health care statistics; preparation of administrative, medical research and reportable types of health care statistics; terms related to computation, collecting and reporting health care statistics; procedures for completing vital statistics for birth, death and other reportable statistics; sources and uses of health information; purpose, function and statistical aspects of the cancer registry.

Course Hours Per Week: Class 2, Lab 2.

Quarters Hours Credit: 3.

Prerequisites: MRE 103, MRE 105, MRE 106, BUS 127

Corequisites: MRE 200, PHM 100

### **MRE 200 - Basic ICD-9-CM Coding Concepts**

Upon satisfactory completion of the tasks for Basic ICD-9-CM Coding Concepts, the student will demonstrate knowledge of: the evolution of International Classification of Diseases - 9th Revision - Clinical Modification (ICD-9-CM) coding; the symbols, abbreviations, conventions and guidelines used in coding diagnoses and procedures; retrieval methods of coded health information.

Course Hours Per Week: Class 2, Lab. 2.

Quarters Hours Credit: 3.

Prerequisites: MRE 103, MRE 105, MRE 106, BIO 124

Corequisites: MRE 107, PHM 100

### **MRE 201 - Intermediate ICD-9 Coding Concepts**

Upon satisfactory completion of the tasks for Intermediate ICD-9-CM and CPT-4 Coding concepts, the student will demonstrate knowledge of: basic ICD-9-CM Coding evolution of Current Procedural Terminology - 4 (CPT-4) coding; characteristics of CPT-4 coding; necessary skills to define and code with proficiency ICD-9-CM and CPT-4 coding of all medical specialties.

Course Hours Per Week: Class 2, Lab 4.

Quarters Hours Credit: 4.

Prerequisites: MRE 107, MRE 200, PHM 100, CAS 101, OSC 105

Corequisites: MRE 203, MRE 204

### **MRE 202 - Advanced ICD-9-CM and CPT-4**

#### **Coding Concepts**

Upon satisfactory completion of the tasks for Advanced ICD-9-CM and CPT-4 Coding Concepts, the student will demonstrate knowledge of: necessary techniques to establish, maintain, and utilize quality control standards for coding ICD-9-CM and CPT-4 coding; methods of indexing and retrieving data from manual and computerized systems; prospective payment system; Diagnostic Related Group's (DRG's), Resource Based Relative Value System (RBRVS) and other reimbursement mechanisms relative to different coding and billing systems; various classification and nomenclature systems considering application and usage by various health care facilities.

Course Hours Per Week: Class 2, Lab 4.

Quarters Hours Credit: 4.

Prerequisites: MRE 201, MRE 203, MRE 204

Corequisites: MRE 205, MRE 207, MRE 208

### **MRE 203 - Computers in Health Care**

Upon satisfactory completion of the tasks for Computers in Health Care, the student will demonstrate knowledge of: the various software programs used in processing, retaining and retrieving health information, including programs for chart tracking, chart location, encoding diagnoses and procedures, statistical reporting, billing, accounting and preparation of various management reports.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisites: MRE 107, MRE 200, CAS 101, PHM 100, OSC 105

Corequisites: MRE 201, MRE 204

### **MRE 204 - Directed Practice I**

Upon satisfactory completion of the tasks for Directed Practice I, the student will demonstrate knowledge of: supervised clinical learning experiences in various health care facilities; theories of health information practice acquired in prior classroom settings; theories of health information practice acquired prior classroom settings; effective communication skills and responsibility for personal grooming and promptness; adherence to department policies and procedures.

Course Hours Per Week: Clinical 6.

Quarter Hours Credit: 2.

Prerequisites: MRE 107, MRE 200, PHM 100

Corequisites: MRE 201, MRE 203

### **MRE 205 - Directed Practice II**

Upon satisfactory completion of the tasks for Directed Practice II, the student will demonstrate knowledge of: advanced, supervised clinical learning experiences; theories of health information practice acquired in prior classroom settings; department work flow; preparation of job descriptions and procedures comparison of procedures performed in health care facilities of various size and type and the various professional

roles of health information technicians within a health care facility; professional conduct in preserving confidentiality of health information.

Course Hours Per Week: Clinical 12.

Quarter Hours Credit: 4.

Prerequisites: MRE 201, MRE 203, MRE 204

Corequisites: MRE 202, MRE 207, MRE 208

### **MRE 206 - Directed Practice III**

Upon satisfactory completion of the tasks for Directed Practice III, the student will demonstrate knowledge of: advanced, supervised clinical learning experiences; theories of health information practice acquired in prior classroom settings; competency in performance of health information functions and work flow of various types of health care facilities to include mental health clinics, hospitals, physician practices, ambulatory and long term care facilities and other facilities as applicable. Prepares job descriptions and procedures; various professional roles of health information technicians.

Course Hours Per Week: Clinical 12.

Quarter Hours Credit: 4.

Prerequisites: MRE 202, MRE 205, MRE 207, MRE 208

Corequisites: MRE 209, MRE 210

### **MRE 207 - Introduction to Health Information Transcription**

Upon satisfactory completion of the tasks for Introduction to Health Information Transcription, the student will demonstrate knowledge of: transcribing health care reports, i.e. history and physical examinations, operative reports, consultations, progress notes, emergency room reports and others; legal and ethical standards relative to medical transcription; association of medical terms, disease processes and medications with various body systems.

Course Hours Per Week: Class 1, Lab 4.

Quarter Hours Credit: 3.

Prerequisites: MRE 201, MRE 203, MRE 204

Corequisites: MRE 202, MRE 205, MRE 208

### **MRE 208 - Health Information Management**

Upon satisfactory completion of the tasks for Health Information Management, the student will demonstrate knowledge of: major functions of management, especially relative to health information management, i.e. planning, staffing, controlling, directing and financing; basic responsibilities and duties of supervisors and their relationship to others; methods of supervision with emphasis on achieving an effective workforce, organizational structures, leadership principles, time and stress management, listening skills and verbal and non-verbal communication; data collection and usage, analyzation and validation of data for management and system needs, design of organizational/departmental systems; investigation of resources to support system needs; implementation of services and systems for organizational/departmental continuity and function and evaluation of these systems for efficiency and effectiveness.

Course Hours Per Week: Class 4.

Quarter Hours Credit: 4.

Prerequisites: MRE 201, MRE 203, MRE 204

Corequisites: MRE 202, MRE 205, MRE 207



## **MRE 209 - Quality Assurance in Health Care**

Upon satisfactory completion of the tasks for Quality Assurance in Health Care, the student will demonstrate knowledge of: the purpose and philosophy of quality assurance; the impact of current health legislation relative to quality assurance; history and current status of quality assurance; the peer review organization system; JCAHO and federal requirements for quality assurance; quality assurance assessment procedures; data collection and display utilizing various types of formats; basic health information functions relative to patient review procedures; basic functions of utilization review and risk management as they relate to health care and health information services.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisites: MRE 202, MRE 205, MRE 207, MRE 208

Corequisites: MRE 206, MRE 210

## **MRE 210 - Health Information Seminar**

Upon satisfactory completion of the tasks for Health Information Seminar, the student will demonstrate knowledge of: the integration of health information department functions and responsibilities by blending supervisory and technical knowledge and skills necessary for maintenance of health information in all health care settings. Instructional methods will include role playing, special projects, guest lectures and organized exercises. Focus will be on application of principles of supervision relative to health information department functions. Develops a focus on student job research and an understanding of the diverse employment opportunities in both traditional and nontraditional settings will be focused on. Students will practice actual health information supervisory roles.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisites: MRE 202, MRE 205, MRE 207, MRE 208

Corequisites: MRE 206, MRE 209

## **MSC 101 - Navigation I**

This course introduces students to basic marine piloting techniques using charts, navigational aids, buoys, markers, rules of the road, light and signals.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: None

## **MSC 102 - Navigation II**

This is a continuation of MSC 101 introducing students to navigational publications and electronic navigational aids. Proper use of electronic equipment (radar, loran, and the gyrocompass) will be stressed. As time permits, classroom instruction may include tides, tidal current effects, danger angles, and soundings.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: MSC 101

## **MSC 103-107 - Ocean Survey**

These courses are conducted aboard ship for periods of up to two weeks. Credit in all five is required for graduation. Students will practice sampling and measuring techniques, and conduct observations during assigned watches. Should circumstances make it impossible to conduct the training aboard ship, training will be conducted aboard small craft or in the field and students will receive credit for a Marine Project course, which will still apply towards graduation.

### **MSC 103-104**

Course Hours Per Week: 6 M. Lab.

Quarter Hours Credit: 2.

Corequisite: 12 credit hours minimum enrollment in other Marine Technology courses, or approval of Marine Technology Chair.

### **MSC 105-106**

Course Hours Per Week: 6 M. Lab.

Quarter Hours Credit: 2.

Prerequisite: Successful completion of all Marine Technology major courses thru the quarter preceding the one in which this cruise is offered, or approval of Marine Technology Chair.

Corequisite: 12 credit hours minimum enrollment in other Marine Technology courses, or approval of Marine Technology Chair.

### **MSC 107**

Course Hours Per Week: 6 M. Lab.

Quarter Hours Credit: 2.

Prerequisite: Successful completion of all Marine Technology major courses thru the seventh quarter, or approval of the Marine Technology Chair.

Corequisite: 12 credit hours minimum enrollment in other Marine Technology courses, or approval of Marine Technology Chair.

## **MSC 108 - Oceanographic Instrumentation**

Oceanographic Instrumentation will be introduced via lecture, demonstration, and student operation. Emphasis will be placed on the use, maintenance, calibration, and repair of general survey instruments.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **MSC 109 - Oceanography I**

This course provides students with a general description of the oceans, their geography, geology, chemistry, and physics.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **MSC 110 - Oceanography II**

This course provides students with a general description of air-sea interactions, wave, tide and ocean current phenomena, and coastal dynamics.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **MSC 111 - Net Construction Methods**

This course introduces students to all types of fish-catching methods available to the commercial and scientific fisherman. Students will be instructed to the basic aspects of rigging, rope splicing, various practical knots, and the kinds of hardware used in biological sampling operations. The basics of biological net construction and repair also will be covered.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

### **MSC 112 - Biological Net Construction I**

This course offers students further instruction and practical experience in the mending and patching of various types of gear as well as additional experience in various aspects of marlinspike seamanship. Students will receive instruction on the various types of webbing available as well as construction techniques for various types of entrapment and entanglement gear. Ordering, sizing, and practical applications of all gear constructed will be explained.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

### **MSC 113 - Biological Net Construction II**

This course offers students further instruction in the design and construction of some of the more complex sampling gear, including biological seines, trawls, and cast nets. Taper cuts and sewing techniques will be introduced as well as computer-assisted design of various equipment. Practical applications of all gear constructed will be explained.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: MSC 112

### **MSC 114 - Biological Sampling Methods**

This course offers students further experience utilizing all the various skills and techniques taught in the prerequisite courses. This course will also include the proper care and maintenance of all equipment used, the proper recording of all biological data as well as theories and uses involved in the compilation of raw biological data.

Course Hours Per Week: Lab 4.

Quarter Hours Credit: 2.

Prerequisite: MSC 113

### **MSC 117 - Practical Experience I**

This course offers students an introduction to various measuring devices and their uses, various hand and hand power tools and their uses, as well as experience in the basic design, construction, and maintenance of marine related materials.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: None

### **MSC 118 - Practical Experience II**

This course introduces students to various stationary power tools and their uses. Further experience will be gained with the use of hand and portable power tools, as well as the basic design, construction, and maintenance of marine-related equipment.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: MSC 117

### **MSC 119 - Practical Experience III**

This course offers students practical experience in the photographic recording of data as it relates to past biological, chemical, and instrumentation studies.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: PHO 110

### **MSC 131 - Marine Biology**

Marine and estuarine habitats and organisms will be examined in this course. An ecological approach to the study of organisms in the local marine communities will be taken.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **MSC 132 - Power Boat Operations and Seamanship**

This course introduces students to the various aspects of safe, skillful, and seamanlike operation of power boats. Students will operate and practice docking small craft. It also introduces students to the various skills, duties, and nomenclature required of able-bodied seamen.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

### **MSC 133 - Marine Invertebrate Zoology**

Taxonomy and classification of marine invertebrate animals will be studied in this course. Preserved animals will be utilized for learning the taxonomic relationships between various marine invertebrates. Laboratory periods will be used to study some of the behavioral characteristics of selected animals.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **MSC 134 - Marine Animals of North Carolina**

This is a lecture course introducing students to marine organisms in North Carolina. Marine plankton, jellyfish, seashells, starfish, fishes, birds, and whales will be briefly studied. Preserved specimens will be used when available. Films and slides will also be utilized.

Course Hours Per Week: Class 4.

Quarter Hours Credit: 4.

Prerequisite: None



### **MSC 135 - Aquarium Systems**

This is a laboratory oriented course emphasizing the proper techniques of setting up marine aquaria and maintaining healthy marine animals in a closed seawater system.

Course Hours Per Week: Class 1, Lab 2.

Quarter Hours Credit: 2.

Prerequisite: None

### **MSC 141, 142, 143 - Marine Projects**

Students will participate in a marine project that may or may not require training aboard a small craft, but will require participation in field work or tours related to knowledge gained in regular classes.

Course Hours Per Course: 33 Hours.

Quarter Hours Credit: 1.

Corequisite: 12 credit hours minimum enrollment in other Marine Technology curriculum courses.

### **MSC 202 - Data Processing I**

This course introduces students to the handling and processing of oceanographic data. Temperature, salinity, and depth data are used to demonstrate standard methods of recording and reducing oceanographic data.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

### **MSC 205 - Data Processing II**

This course is a continuation of MSC 202 and will emphasize computer application in the collection, handling, reduction, and display of oceanographic temperature, salinity, and depth data.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisites: CAS 106, MSC 202 or permission of instructor

### **MSC 206 - Estuarine Survey**

A course in which emphasis is placed on field sampling and measurements, laboratory analysis, data reduction, and data representation. This course is designed to provide an opportunity for soon-to-be-graduating students to apply in a comprehensive, challenging, and significant manner what has been learned during the past seven quarters. A formal report will be required.

Course Hours Per Week: Class 2, Lab 4, M. Lab 3.

Quarter Hours Credit: 5.

Prerequisites: CHM 109, CHM 224, MSC 108

### **MSC 213 - Marine Vertebrate Zoology**

Identification, classification, and natural history of marine vertebrates are the studies in this course.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

### **MUS 150 - Survey of Music Literature**

This course is designed to increase the student's knowledge and appreciation of music. A technical knowledge of music not required.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

### **MUS 151 - Introduction to Music History I**

This course traces the history of music from the Middle ages through the Baroque Period and is designed to explain style development in relationship to historical influences. Historical and social occurrences are directly linked to the changes in musical style.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

### **MUS 152 - Introduction to Music History II**

This course is an overview of music history and literature of the Classic, Romantic, and Contemporary periods from 1750 to the present. The relationship between musical development and historical and social events is stressed.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

### **NUR 101 - Fundamentals of Nursing**

Nursing 101 introduces the student to cognitive, psychomotor, and affective skills necessary to make sound nursing decisions and practice competently. Beginning knowledge of the nurses role as a member within the profession is addressed. The nursing process is introduced as a systematic method of managing nursing care. Psychosocial and physiological concepts basic to a humanistic and caring application of scientific principles are included.

Course Hours Per Week: Class 4, Lab 6.

Quarter Hours Credit: 7.

Prerequisite: Acceptance into the CFCC ADN program

Corequisites: BIO 121, PSY 150 (may be taken at a prior time)

### **NUR 102 - Common Stressors in Medical-Surgical Nursing**

Nursing 102 utilizes the nursing process as a tool to assist students in acquiring knowledge essential in providing care to patients experiencing common health stressors. The nurses role as a member of the profession is stressed in accurate reporting and recording. The nursing management of safe, accurate medication administration is emphasized and physical assessment skills are introduced. The student is provided the opportunity for humanistic and caring application of scientific principles in acute and long-term clinical agencies.

Course Hours Per Week: Class 4, Lab 4, Clinical 10.

Quarter Hours Credit: 9.3.

Prerequisites: BIO 121, NUR 101

Corequisite: BIO 122 (May have been taken at a prior time)

### **NUR 103 - Medical-Surgical Nursing I**

Nursing 103 emphasizes the nursing process as an organizing framework to provide nursing care for patients experiencing common and/or chronic health deviations. Students are provided opportunities in affiliating agencies to demonstrate understanding of accountable management, in prioritizing, and organizing nursing care for one patient. Opportunities for professional growth, continuous learning and self-development are provided.

Course Hours Per Week: Class 6, Clinical 10.

Quarter Hours Credit: 9.3.

Prerequisites: NUR 102, BIO 122

### **NUR 104 - Maternal-Child Nursing**

Nursing 104 is designed as a two part course which utilizes the nursing process to assist the student in the providing care for maternal, newborn, and pediatric patients. The student is expected to organize care and demonstrate accountable management of one or two patients through a collaborative process. Opportunities are provided for continued development as a member within the discipline of nursing. Clinical experiences are provided in acute and ambulatory care settings.

Course Hours Per Week: Class 7, Lab 2, Clinical 10.

Quarter Hours Credit: 11.3.

Prerequisites: NUR 103, PSY 250, BIO 123, NUR 120 for the LPN student

### **NUR 105 - Issues and Trends**

Nursing 105 is designed to assist the student in examining the role of the Associate Degree Nurse as a member within the Discipline of Nursing. The course addresses nursing education and continuous learning, self-development, ethical standards, legalities, professional organizations, political and economic forces, and historical and current trends.

Course Hours Per Week: Class 2.

Quarter Hours Credit: 2.

Prerequisite: None

### **NUR 120 - Nursing Transition**

Nursing Transition provides an orientation to the conceptual framework of the Associate Degree Nursing Program. It is designed for the Licensed Practical Nurse entering the ADN program with advanced standing. The course emphasis is on concepts basic to nursing, common stressors in medical-surgical nursing, basic physical assessment skills, and pathophysiological processes with related nursing interventions for common problems in the respiratory, cardiovascular, integumentary, GI, and immune systems and diabetes mellitus. Clinical experience will focus on the utilization of the nursing process on medical-surgical floors in local hospitals.

Course Hours Per Week: Class 6, Lab 2, Clinical 3.

Quarter Hours Credit: 8.

Prerequisites: BIO 122, graduation from an approved Practical Nursing program. This course must be repeated if completed more than one academic year prior to entering the program.

### **NUR 201 - Psychiatric Nursing**

Nursing 201 utilizes the nursing process as a tool to assist the student to gain current knowledge in providing care to individuals experiencing alterations in social and psychological functioning. The student must coordinate patient care as the patients interact with their families, groups, and/or communities. Opportunities for professional growth, continuous learning, and self-development are incorporated into the course. Inpatient psychiatric facilities are the primary focus of clinical experiences.

Course Hours Per Week: Class 5, Clinical 10.

Quarter Hours Credit: 8.3.

Prerequisite: PSY 150

### **NUR 202 - Patient Care Management**

Patient Care Management addresses concepts of leadership and management necessary to provide and coordinate care for a group of patients. Principles of communication, delegation, conflict resolution, and roles and responsibilities of members of the health care team are discussed.

Course Hours Per Week: Class 1.

Quarter Hours Credit: 1.

Prerequisite: None

### **NUR 203 - Medical-Surgical Nursing II**

In Nursing 203 the nursing process is utilized as the basis for providing patient-centered care through a collaborative approach involving the patient, family, significant others, and the health care team. The role of manager of care is emphasized and students are provided opportunities to organize, prioritize, and delegate accountable care for groups of patients experiencing common alterations in health. Clinical experiences are on medical-surgical units of affiliating agencies.

Course Hours Per Week: Class 6, Clinical 15.

Quarter Hours Credit: 11.

Prerequisites: NUR 201, NUR 202

### **NUR 204 - Medical-Surgical Nursing III**

Nursing 204 utilizes the nursing process to guide the student in providing and managing care for adult patients experiencing more complex common health deviations. Clinical experiences are structured to facilitate the transition from the role of the student to the role of a practicing member within the discipline of nursing.

Course Hours Per Week: Class 6, Clinical 15.

Quarter Hours Credit: 11.

Prerequisite: NUR 203

### **ORI 150 - Seminar: Lifelong Learning**

This course is designed to empower students with the capability to develop their own successful college experience by helping them to become more proficient learners; to utilize available campus resources; to experience both campus and community enrichment activities; to foster a better understanding of self, diverse college population and future career goals through a multicultural component and a career component.

Course Hours Per Week: 5.

Quarter Hours Credit: 5.

Prerequisite: None



### **OSC 100 - Basic Keyboarding**

This is an introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation, and manuscripts. A minimum speed requirement is 20 gross words a minute with 5 errors allowed.

Course Hours Per Week: M, Lab 3.

Quarter Hours Credit: 1.

Prerequisite: None

### **OSC 105 - Keyboarding**

This course is an introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation, and manuscripts. The minimum speed requirement is 20 gross words a minute with 5 errors allowed.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

### **OSC 118 - Document Production**

Instruction emphasizes the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulation, manuscript, correspondence, and business forms. Minimum speed requirement is 30 gross words a minute with 5 errors allowed.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: OSC 105 or equivalent

### **OSC 119 - Advanced Document Production**

Emphasis is placed on straight-copy speed improvement, accuracy, and proofreading skills. Students learn the techniques needed in planning and in typing units that closely resemble the work appropriate to the field of study. These units include a review of letter styles, tabulations, manuscripts, memorandums, and reports.

Course Hours Per Week: Class 3, Lab. 2.

Quarter Hours Credit: 4.

Prerequisite: OSC 118

### **OSC 120 - Administrative Office Applications I**

Simulated office assignments will be given in order to develop proficiency in completing technical projects in an electronic office. Speed and accuracy will be stressed as well as these areas: organizing materials, working under pressure, making decisions, setting priorities, communication skills, and human relations.

Course Hours Per Week: Class 1, Lab. 2.

Quarter Hours Credit: 2.

Prerequisite: OSC 119

### **OSC 121 - Administrative Office Applications II**

Opportunities for students to acquire the skills and knowledge for professional certification will be provided. Students will take several kinds of proficiency tests for professional office employment. Students will be given an opportunity to earn professional certification as Administrative Office professionals.

Course Hours Per Week: Class 1, Lab. 2.

Quarter Hours Credit: 2.

Prerequisite: OSC 120

### **OSC 200 - Information Management**

Information management is designed to provide training in the area of records preparation, storage, and control. Students will perform manual and database filing exercises. Fundamental rules of alphabetic indexing and the four basic filing systems will be emphasized.

Course Hours Per Week: Class 3, Lab. 2.

Quarter Hours Credit: 4.

Prerequisite: CAS 109

### **OSC 213 - Office Procedures**

Dictaphones, typewriters, electronic calculators, copying machines, and similar modern office equipment are utilized by students to efficiently produce quality office documents such as letters, memos, payrolls, invoices, manuscripts, and statistical charts in a simulated office situation.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisites: CAS 101, CAS 125

### **OSC 217 - Comprehensive Speedwriting**

An introduction to an alphabetic shorthand system in which sounds are represented by letters of the alphabet and common punctuation marks. Emphasis is placed on the theory of non-shorthand elements of dictation and transcription.

Course Hours Per Week: Class 3, Lab 4.

Quarter Hours Credit: 5.

Prerequisite: None

### **OSC 240 - Comprehensive Machine Transcription**

Students develop skill typing mailable letter, memoranda, and manuscripts directly from records disks. Emphasis is placed on vocabulary development.

Course Hours Per Week: Class 3, Lab 4.

Quarter Hours Credit: 5.

Prerequisites: OSC 118, CAS 125

### **PED 150 - Foundations of Physical Activity**

A study of immediate and long term effects of physical activity and the establishment of individualized programs for acquiring and maintaining physical fitness.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: None

**PHI 150 - Introduction to Philosophy**

An introduction to basic philosophical concepts and issues with emphasis on major philosophers and perspectives.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**PHM 100 - Pharmacology**

Upon satisfactory completion of the tasks for Pharmacology the student will demonstrate knowledge of the basic concepts of pharmacology with special emphasis on their relationship to disease processes, body systems and medical specialties and subspecialties. Explains adverse effects of various medications and the intrinsic and extrinsic factors affecting drug action in the body. Defines appropriate terminology and abbreviations relative to medication, drug responses and health information documentation. Identifies general physiologic actions and uses of common pharmacological agents. Discusses various pharmacological preparations of medications. Differentiates various dosage forms, sources, classification of drugs and drug dependencies. Introduces available resources for pharmacological reference. Incorporates legal concepts relative to medication and appropriate documentation. Emphasizes pharmacological impact on the health care industry.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: BIO 124

**PHO 110 - Introduction to Photography**

This course is an introductory course covering the basic skills required for black and white photography, the operation of the camera, the creation and content of a good photograph, processing film, making prints, and preparing photographs for display.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: None

**PHO 150 - Introduction to Photography**

This course is an introductory course covering the basic skills of black and white photography, the operation of the camera, the creation and content of a good photograph, processing film, making prints, and preparing photographs for display.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

**PHY 100 - Introductory Physics**

This is a fundamental course that forms a sufficient basic background for a student to progress into PHY 103, PHY 104, PHY 105, or PHY 106. The student will be introduced to the units used in measurement, and to the concepts of force, work, and power as they can be applied to linear motion. Emphasis is on the universal applicability of these concepts to other more specialized area of physics. This course enables students in certain technical curricula to take the more advanced physics courses with a single prerequisite course.

Course Hours Per Week: Class 4, Lab 2.

Quarter Hours Credit: 5.

Prerequisite: MAT 121 with a grade of C or better

**PHY 101 - Physics: Properties of Matter**

This is an introductory course which describes some basic physical properties of matter in the solid, liquid, and gaseous states. Topics discussed are: units of measurement and unit conversions; density and hydrostatic pressure in liquids, surface tension; Hooke's law and the elasticity of solids and liquids; heat and temperature measurement; and the ideal gas law.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: MAT 121 with a grade of C or better

**PHY 102 - Physics: Work, Energy, and Power**

This course is the second part of the introductory course and is designed to follow PHY 101. Topics discussed are velocity and acceleration of objects, Newton's laws of motion, vector calculations, work, energy, power, and rotary motion.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: PHY 101 and MAT 122 with a grade of C or better

**PHY 103 - Physics: Electricity**

This course is an introduction to the physical principles of electrical phenomena. Topics discussed include electrostatics, electric current flow and Ohm's law, magnetism and forces caused by electric currents, induced electric currents, alternating current devices, and simple electronic DC power supply circuits.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: PHY 100 or Phy 102, and MAT 122 with a grade of C or better



### **PHY 104 - Physics: Light and Sound**

This course is an introduction to the description of optical and acoustic devices. Topics included are wave motion and resonance, sound measurements and human hearing, the Doppler effect, illumination and color, optical elements (lenses and mirrors), and some basic principles of physical optics.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: PHY 100 or PHY 102, and MAT 122 with a grade of C or better

### **PHY 105 - Physics: Heat and Fluids**

This course is an introduction to heat energy and its effects on various materials. The course content is designed to provide the fundamental concepts necessary to describe heat transfer processes involving moving fluids. Topics included are pressure in liquids, laminar and turbulent flow of fluids, Bernoulli's principle, the ideal gas law, temperature and heat energy, and heat transfer via moving fluids.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: PHY 100 or PHY 102, and MAT 122 with a grade of C or better

### **PHY 106 - Applied Mechanics**

This course is an introduction to statics. Some topics included are the equilibrium of two and three dimensional force systems, centroid and center of gravity, and the analysis of trusses and frames.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: PHY 100 or PHY 102, and MAT 123 with a grade of C or better

### **PHY 150 - College Physics I**

A general college physics course designed to meet the needs of students working toward a Bachelor's Degree in Arts and Science. The course covers the principles and practical applications of Mechanics. Topics include: scalars and vectors, linear motion, Newton's laws, work, energy, power, momentum, torques, rotational dynamics and equilibrium. The student will develop basic skills of scientific experimentation including manipulation of apparatus and recording and analyzing data.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: MAT 160 with a grade of C or better

Corequisite: MAT 161

### **PHY 151 - College Physics II**

A continuation of College Physics I. The course covers the principles and applications of Heat, Sound, and Optics. Topics include thermal energy, temperature, heat transfer, gases, fluid statics, fluid dynamics, elastic properties of solids, waves, reflection and refraction, optical instruments and wave interference.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: MAT 161 and PHY 150 with a grade of C or better

### **PHY 152 - College Physics III**

A continuation of PHY 150 and PHY 151. The course covers the principles and applications of Electricity and Magnetism. Topics include electric force, electric energy, electric current and Ohm's laws. DC circuits, capacitors, magnetic forces and fields, induced voltages and AC circuits. The course also covers modern physics.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: PHY 151 with a grade of C or better, or PHY 150 with a grade of C or better and instructor's consent

### **PHY 225 - Forensic Physics**

This course is a survey of a variety of topics from technical physics which are useful in understanding phenomena experienced and equipment used in the criminal justice field. The course can be divided into three principal areas of study - ray optics and converging lenses, simple electric circuits using relays to achieve the AND and OR logic functions, linear motion and kinetic energy. Particular attention is given to the student's understanding of the physical principles of operation of devices such as cameras, telescopes, and alarm circuits.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: MAT 121

### **PME 101 - Marine Engines I**

This is a course that introduces students to the basic construction of internal combustion engines of the reciprocating type. Basic maintenance and repair of related equipment including starters, water pumps, and generators will be covered. Outboard motors will be the primary type of engine studied in this course.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

### **PME 102 - Marine Engines II**

This course is a continuation of PME 101. Theory of operation, breakdown and overhaul of small engines, water pumps, and accessories will be emphasized. Maintenance on all school inboard and outboard engines will be conducted as an integral part of the course.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: PME 101

**POL 150 - American National Government**

This course is designed to cover the origin, development, organization, functions, powers, policies, and programs of the federal government with emphasis on the three branches of government and how they interact with one another, with political parties, interest groups, and the electorate in political decision-making.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**POL 250 - American State and Local Government**

This course is designed to analyze the relationship between federal government and state and local governments. It covers the organization, functions, legal procedures, and political processes at state and local level.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**PSY 102 - Introduction to Psychology**

This is a course designed to cover the basic principles of psychology that will be of assistance to the student in developing greater self-understanding and in improving interpersonal relationships on both individual and job-related bases. The content of the course includes the following: basic terminology; methods of gathering psychological data; psychology as a science; current schools of thought; learning theory and memory; personality development; stress and adjustment; and abnormal behavior.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

**PSY 150 - Introduction to Psychology**

This course is designed to cover the basic principles of psychology with emphasis on terminology, psychological research methods, theoretical schools, learning theory, physiological bases of behavior, mental health and adjustment, motivation, perception, and personality theory.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**PSY 250 - Human Growth and Development**

A survey course covering the entire life span with emphasis on the physical, psychological, cognitive, and social development of the individual.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: PSY 150

**PSY 298 - Abnormal Psychology**

This course provides descriptions of various psychological disorders, presents historical and theoretical perspectives, explores diagnostic techniques and research methods, and identifies approaches to treatment.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: PSY 150

**RAD 100 - Introduction and Patient Care**

An introduction to the profession of Radiologic Technology. The student is acquainted with good ethical principles; responsibilities of a technologist and relationship of the technologist to other health professionals. Students will be instructed in patient care during radiographic procedures, proper radiation protection and medical terminology.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: None

**RAD 101 - Radiologic Technology I**

An introduction to the study of radiologic technology designed to provide a foundation of basic knowledge and principles which will enable the student to understand and perform routine radiographic procedures. Topics to be presented include the nature of x-radiation; fundamentals of radiographic exposure and processing; routing radiographic positioning; of extremities, chest, abdomen, gastrointestinal and genitourinary tracts. The student will attend and actively participate in lectures, discussions, demonstrations, practice of skills, and laboratory activities.

Course Hours Per Week: Class 4, Clinical 6.

Quarter Hours Credit: 6.

Prerequisite: None

**RAD 102 - Radiologic Technology II**

Continued study of radiographic exposure and positioning through lecture, discussion, demonstration, and laboratory exercises. Topics in exposure will center on expanding the basic concepts of radiation, the characteristics of a radiographer, and the relationships existing between exposure factors. Positioning will concentrate on the spine, hips, and shoulders.

Course Hours Per Week: Class 4, Clinical 3.

Quarter Hours Credit: 5.

Prerequisite: RAD 101

**RAD 103 - Radiologic Technology III**

A study of selected topics in radiographic exposure focusing on radiographic equipment and techniques. Physical principles and mechanisms related to these topics will be presented and applied. The anatomy and positioning of the skull, facial bones, and sinuses will also be presented.

Course Hours Per Week: Class 4, Clinical 3.

Quarter Hours Credit: 5.

Prerequisite: RAD 102



### **RAD 104 - Clinical Education and Radiographic Study**

Practical experience in a clinical setting will enable the student to apply theory presented thus far and to practice radiographic equipment manipulation, radiographic exposure, routine radiographic positioning, film processing and identification, and patient care techniques. There will be regularly scheduled sessions of film critique.

Course Hours Per Week: Clinical 15.

Quarter Hours Credit: 5.

Prerequisite: RAD 101

### **RAD 105 - Clinical Education and Radiographic Study**

Selected experiences in a clinical setting will provide student with the opportunity to continue practice in radiographic equipment manipulation, radiographic exposure, radiographic positioning, film processing and identification, and patient care techniques. This is the beginning practice of procedures requiring contrast media. A regularly scheduled film critique session will be held.

Course Hours Per Week: Clinical 15.

Quarter Hours Credit: 5.

Prerequisites: RAD 104, RAD 102

### **RAD 106 - Clinical Education and Radiographic Study**

Emphasis of this course is the clinical application of all radiographic principles presented in previous courses. Students will have expanded hours and responsibilities in the clinical area. This should provide the students with the opportunity to further sharpen their radiographic skills and knowledge. Included are regularly scheduled film critique sessions.

Course Hours Per Week: Clinical 33.

Quarter Hours Credit: 11.

Prerequisites: RAD 105, RAD 103.

### **RAD 107 - Radiologic Physics**

A survey of Physics topics relevant to Radiologic Technology, including units, electricity and magnetism as related to basic x-ray machine circuitry, x-ray generation and interactions of x-ray with matter.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: RAD 102

### **RAD 201 - Radiologic Technology IV**

Four broad areas pertaining to the science of radiography will be presented in this course. The basic concepts of radiation health as related to the technologist are discussed. A study of various modern imaging methods is presented. The fundamentals of selected special radiographic procedures and computer fundamentals will also be introduced.

Course Hours Per Week: Class 12.

Quarter Hours Credit: 12.

Prerequisite: RAD 103

### **RAD 202 - Radiologic Technology V**

Again four different areas of the science of radiography will be presented in one course. Quality assurance in the context of a radiology department will be presented. Pathology as related to Radiologic Technology will be covered. Pharmacology as applicable to Radiologic Technology will be introduced. A seminar devoted to modern imaging modalities will also be conducted.

Course Hours Per Week: Class 8.

Quarter Hours Credit: 8.

Prerequisite: RAD 201.

### **RAD 203 - Radiologic Technology VI**

The student will conduct a self-study of all areas of Radiologic Technology through information provided by the instructor. A general review of radiologic technology as a whole will be pursued with discussions of key topics.

Course Hours Per Week: Class 6.

Quarter Hours Credit: 6.

Prerequisite: RAD 202.

### **RAD 204 - Clinical Education and Radiographic Study**

A continuation of practical experience in a clinical setting. The student will be given additional responsibilities which will eventually allow the student to demonstrate his ability to operate a radiographic room and other radiographic equipment unassisted and to evaluate the radiograph he/she has produced. Further practice of special radiographic procedures will be permitted. Regularly scheduled film critique sessions will be held with emphasis on associated problems.

Course Hours Per Week: Clinical 18.

Quarter Hours Credit: 6.

Prerequisites: RAD 106, RAD 103.

### **RAD 205 - Clinical Education and Radiographic Study**

A continuation of practical experience in a clinical setting. Further responsibilities will be offered with relation to manipulation of radiographic equipment and examination techniques. Evaluation of radiographs, associated problems, and revision of techniques will be emphasized. Student rotations, evaluations, and number and type of procedures performed up to this point will be evaluated and the student will be placed in that area in which he or she needs additional practice and experience. Rotations through special procedures and nuclear medicine will be available to the student.

Course Hours Per Week: Clinical 24.

Quarter Hours Credit: 8.

Prerequisites: RAD 201, RAD 204

### **RAD 206 - Clinical Education and Radiographic Study**

The student will spend the entire quarter gaining further clinical experience, thereby sharpening and perfecting the skills and applications presented in this course of study in Radiologic Technology.

Course Hours Per Week: Clinical 39.

Quarter Hours Credit: 13.

Prerequisites: RAD 202, RAD 205.

## **RAD 207 - Clinical Education and Radiographic Study**

A continued clinical experience in all areas of Radiologic Technology in which the student requires additional practice and experience. Independence and decision-making with regard to certain procedures is emphasized.

Course Hours Per Week: Clinical 33.

Quarter Hours Credit: 11.

Prerequisites: RAD 206, RAD 202.

## **RED 070 - College Level Reading**

College Level Reading is designed to develop effective reading and clear thinking skills at the college level. Emphasis is placed on practical reading material and on literate levels of comprehension. Students will learn to read and interpret passages from textbooks, periodicals, and catalogs. Students will also learn to read and interpret application forms and basic business agreements. The primary purpose of this course is to prepare students to read materials encountered in college courses and in personal activities. This course is required for students who have a scaled score at 34 or below on ASSET.

Course Hours Per Week: Class 5.

Institutional Hours Credit: 5.

(Does not count toward graduation)

Prerequisite: Placement by entry testing

## **RED 080 - Advanced Reading I**

Advanced Reading I is designed to continue the student's mastery of literate levels of comprehension. Vocabulary emphasis will be on words specific to the content of various curricula. The focus of this course is for students to learn to read for a variety of purposes.

Course Hours Per Week: Class 5.

Institutional Hours Credit: 5.

(Does not count toward graduation)

Prerequisite: Satisfactory completion of RED 070 or placement by entry testing

## **RED 090 - Advanced Reading II**

Advanced Reading II is designed to teach reading for writing and to encourage effective research skills. The purpose of the course is to prepare students to read complex materials, to research information, and to use higher level critical thinking skills. This course lends itself to writing at the computer, and students will be taught to produce writing for reading for their peers.

Course Hours Per Week: Class 5.

Institutional Hours Credit: 5.

(Does not count toward graduation)

Prerequisite: Satisfactory completion of RED 080 or placement by entry testing

## **REL 150 - Introduction to Religion**

This course covers religion as a field of study, major modes of religious expression, chief issues in religious thought and experience, the search for method since the Enlightenment, and contemporary developments.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **REL 198 - World Religions**

A study of the basic concepts and religious beliefs of mankind as reflected by various cultures.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **REL 250 - Religion in America**

This course examines the development and process of religion in the United States from colonial times to the present, surveying Protestant, Catholic, and Jewish leaders, native American and black American traditions, religious reform and revivalism.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **RLS 103 - Fundamentals of Real Estate**

This course consists of instruction in fundamental real estate principles and practices, including real estate law, financing, brokerage, closing, valuation, management, and taxation. Also included is instruction on residential building construction, land use, the real estate market and the North Carolina Real Estate License Law and Rules/Regulations of the North Carolina Real Estate Licensing Board.

Course Hours Per Week: Class 6.

Quarter Hours Credit: 6.

Prerequisite: None

## **RLS 109 - Real Estate Math**

This course consists of the practice and application of major aspects of real estate math.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: RLS 103 or an equivalent course approved by the North Carolina Real Estate Licensing Board or by instructor approval.

## **RLS 114 - Real Estate Law**

This course consists of advanced level instruction in real property ownership and interests, transfer of title to real property, land use controls, real estate brokerage and the law of agency, real estate contracts, landlord and tenant law, mortgages/deeds of trust, property insurance, federal income taxation of real estate, the N.C. Real Estate License Law, Rules/Regulations of the N.C. Real Estate Licensing Board, and the Licensing Board's "Trust Account Guidelines."

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: RLS 103 or an equivalent course approved by the North Carolina Real Estate Licensing Board



## **RLS 115 - Real Estate Finance**

This course consists of advanced level instruction on the major aspects of financing real estate transactions, including sources of mortgage funds, the secondary mortgage market, financing instruments, types of mortgage loans, underwriting mortgage loans, consumer legislation affecting real estate financing, real property valuation, closing real estate sales transactions, and finance mathematics.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: RLS 103 or an equivalent course approved by the North Carolina Real Estate Licensing Board

## **RLS 116 - Real Estate Brokerage Operations**

This course consists of basic instruction in the various aspects of real estate brokerage operations, including establishing a brokerage firm, management concepts and practices, personnel and training, marketing operations, records and bookkeeping systems (including trust account bookkeeping), and financial operations.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: RLS 103 or an equivalent course approved by the North Carolina Real Estate Licensing Board

## **SAF 119 - First Aid and Adult and Infant/Child CPR**

This course will certify the student in first aid and infant/child and adult CPR. Topics will include principles of responding to emergencies and techniques for handling common childhood injuries, accidents, and illness. Recommend: Course be taught by a certified representative of either American Heart Association or American Red Cross.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **SAF 120 - First Aid**

This course will introduce students to basic first aid and enable them to successfully cope with the everyday injuries that might occur. Course coverage will range from minor cuts and burns to artificial respiration and the treatment of shock.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **SAF 121 - First Aid and Marine Safety**

This course introduces students to first aid procedures which will enable them to successfully cope with the everyday injuries and accidents that may occur in a marine environment. Prevention of these accidents will be discussed and stressed. Students will be taught safety rules utilized on board a vessels as well as at shore stations.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **SOC 102 - Principles of Sociology**

This is an introductory course designed to cover the basic principles of sociology and to provide an understanding of culture, social structure, socialization, collective behavior, deviance and social control, stratification, and social mobility. Emphasis is placed on the scientific study of group behavior and the effect of social life on personality and behavioral development.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **SOC 103 - American Institutions**

This course is a study of the effect of American social, economic, political, religious, and educational institutions upon the individual's role as a citizen and a worker. The course dwells upon current local, national, and global problems in the light of our political and economic heritage.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **SOC 150 - Introduction to Sociology**

This course is designed to cover the basic principles of sociology and to provide an understanding of sociological concepts, methodology, culture, social structure and stratification, collective behavior, deviance, social mobility, demographics, and contemporary social institutions.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

## **SOC 250 - Sociology of the Family**

A comprehensive study of marriage and a changing family structure, relationships, roles, and functions. The course may include the following topics: bases for mate selection, courtship patterns, the family as an institution, adjustment, parenting, communication, and conflict resolution.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: SOC 150

## **SOC 260 - Sociology of Deviant Behavior**

This course focuses on the various sociological theories of deviant behavior. Areas covered may include substance abuse, sexual deviance, violence, property crimes, and mental disorders.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: SOC 150

**SOC 265 - Sociology of Juvenile Delinquency**

This course is designed to analyze the causes, treatment, and prevention of delinquency. Emphasis is placed on the sociological and psychological parameters affecting adolescent development which may contribute to delinquency.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: SOC 150

**SOC 270 - Modern Social Problems**

A critical analysis of current major social issues and problems in American society. Systemic and institutional problems related to race, ethnics, crime, and social disorganization may be covered with emphasis on strategies for improvement.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: SOC 150

**SPA 150 - Spanish I**

Using a functional, integrated skills approach, this is the first course of a two-quarter sequence for beginning students of Spanish. Receptive skills and productive skills are developed simultaneously. Course includes aural-oral practice, basic reading and writing skills and developing speaking skills in the language. Basic grammar will be incorporated in the development of these skills.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**SPA 151 - Spanish II**

Using a functional, integrated skills approach, this is the second course of a two-quarter sequence for beginning students of Spanish. Receptive skills and productive skills are developed simultaneously. Course includes aural-oral practice, basic reading and writing skills and developing speaking skills in the language. Basic grammar will be incorporated in the development of these skills.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: SPA 150

**SPA 160 - Introductory Spanish**

An introduction to modern Spanish with an emphasis on command of the language. Course include aural-oral practice; basic reading, writing skills, and patterns of spoken Spanish.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**SPH 150 - Introduction to Speech**

This course provides students with an introductory perspective of an experience in speech communication. Incorporating both the theories of speech and the application of those theories through skill development exercises, the course focuses on four major categories of information: elements of communication, inter-personal communication, small group interaction, and public speaking.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**SWK 150 - Introduction to Social Work**

A survey course covering the historical development, philosophy, organizational structure, and methods in professional social work in the United States.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**WLD 101 - Basic Welding**

This is an overview of equipment and procedures used by the welding industry. Instruction will be given in methods, techniques and skills. The objective is to furnish students with a working knowledge of the welding field, and demonstrate how it is related to manufacturing.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

**WLD 134 - Marine Welding**

There will be demonstrations by the instructor and practice by students in the the flat position to the vertical position in the time allotted during the welding shop. Students should become proficient in welding stringer beads from the flat position to the vertical position in the time allotted during the quarter. Safe and correct methods of assembling and operating the welding equipment, the correct use of flame cutting and arc cutting equipment applicable to mechanical repair work will be demonstrated.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None



# VOCATIONAL CURRICULA

In North Carolina, as well as throughout the nation, the demand for skilled tradesmen is at an all-time high. Hardly a day passes that the College does not have at least one call from industry looking for prospective employees. Graduates of the trade programs sometimes have as many as four or five offers of employment upon graduation.

Students in the skilled trade programs are trained in shops similar to those of private industries. The shops contain testing and measuring instruments, tools, and equipment of the same size and types as found in private firms. The facilities make possible practical instruction which is essential to the preparation of skilled workers needed by today's modern industries. Students in these trade programs spend twenty-five to thirty hours per week in school; this time is divided between classroom studies and practical shop work.

Skilled craftsmanship in the occupation, appropriate educational background and leadership ability are the bases for instruction selection in these trade courses.

A diploma is awarded to those students who satisfactorily complete the full-time trade program. To be eligible for the diploma, students must maintain satisfactory grades in all shop and class work, and maintain an overall grade point average of 2.00.

## CAPE FEAR COMMUNITY COLLEGE AUTHORIZED PROGRAMS

One year (12 months) training courses are offered in the following skilled trades:

		CODE	DAY	EVENING	DIPLOMA	ADVANCED DIPLOMA
1	Air Conditioning, Heating & Refrigeration	V024	*		*	
2	Boatbuilding	V115	*		*	
3	Dental Assisting	V011	*		*	
4	Industrial Electricity	V124	*		*	
5	Industrial Mechanics	V028	*		*	
6	Light Construction	V029	*		*	
7	Marine and Diesel Mechanics	V034	*		*	
8	Phlebotomy (Certificate Program)	V168		*		
9	Practical Nursing	V038	*		*	
10	Welding	V050	*	*	*	

See pages 98 to 111 for course descriptions.



# Air Conditioning, Heating and Refrigeration

The Air Conditioning, Heating and Refrigeration curriculum is designed to teach knowledge and skills necessary for servicing and installing residential and light commercial climate control equipment. Instruction will include heating and cooling theory, applied electricity and electronics, and the operating principles for a wide-range of heating and cooling equipment. The diploma program will emphasize start-up and service skills for oil, gas and electric furnaces, air-cooled air conditioning and air-to-air heat pumps.

Advanced diploma level programs will provide for more in-depth study and experience and will also include service and installation of water-cooled air conditioners, water source heat pumps, variable speed heat pumps, conventional heating systems and residential and light commercial system design.

	Credit
<b>MAJOR COURSES</b>	
AHR 1113 Servicing Heating Equipment	6
AHR 1115 Fundamentals of Heating	3
AHR 1113-A Service Heating Equipment	(4)
AHR 1113-B Service Heating Equipment	(2)
AHR 1121 Principles of Refrigeration	6
AHR 1123 Principles of Air Conditioning	5
AHR 1129 Applied Electricity for Heating, Ventilation & Air Conditioning Systems	3
AHR 1132 Air Conditioning Servicing	7
AHR 1135 Applied Electronics for Heating, Ventilation & Air Conditioning Systems	
AHR 1138 All-Weather Systems: Convention	6
AHR 1139 All-Weather Systems: Heat Pumps	<u>7</u>
	46
<b>RELATED</b>	
DFT 1104 Blueprint Reading	3
ELC 1150 Basic Electricity	3
ELC 1151 Applied Wiring Diagrams	3
MAT 1101 Trade Mathematics	5
WLD 1104 Basic Gas Welding	<u>2</u>
	16
<b>GENERAL EDUCATION</b>	
ENG 1101 Communication Skills	2
PHY 1101 Applied Science	4
PSY 1101 Human Relations	<u>3</u>
	9
<b>TOTAL CREDITS</b>	<b>71</b>

## AIR CONDITIONING, HEATING & REFRIGERATION

The four-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>III</b>
AHR 1113	AHR 1123
AHR 1115	AHR 1132
ELC 1150	AHR 1135
MAT 1101	PHY 1101
WLD 1104	
<b>II</b>	<b>IV</b>
AHR 1121	AHR 1138
AHR 1129	AHR 1139
BPR 1104	PSY 1101
ELC 1151	
EN G 1101	

## Boatbuilding

The Boatbuilding curriculum prepares individuals for employment in the boat manufacturing and repair industries. Today's boatbuilder is a skilled craftsman who can create complex shapes out of fiberglass, wood, and an array of other space age materials. The boatbuilder must be able to select the proper tools and materials required for a particular job and to plan its efficient execution so that the work can be finished in accordance with blueprint specifications.

Graduates may find employment with a yacht manufacturer or other companies that need fine wooden furniture and mouldings fabricated and installed. Opportunities also exist in the fiberglass industry. Boat hulls, some automobile bodies, shower stalls, and other items are made from fiberglass molds. Boatbuilding graduates know how to build these molds to a mirror finish from a set of blueprints. Graduates may also find employment with a boat yard that maintains, repairs, and renovates boats.

	Credit
<b>MAJOR COURSE</b>	
CAR 1110 Modern Yacht Joiner Practice I	5
CAR 1111 Modern Yacht Joiner Practice II	4
CAR 1114 Yacht Repair and Renovation	7
ELC 1101 Practical Marine Electricity I	3
FBG 1101 Fiberglass Mold Making	7
MSC 1110 Boat Building I	9
MSC 1111 Boat Building II	8
MSC 1112 Boat Building III	7
MSC 1120 Marine Systems	<u>2</u>
	52



**RELATED COURSES**

DFT 1127	Marine Drafting	5
MAT 1101	Trade Mathematics	<u>5</u>
		10

**GENERAL EDUCATION**

ENG 1101	Communication Skills	2
PHY 1101	Applied Science	<u>4</u>
		6

**TOTAL CREDITS** **68**

**BOATBUILDING**

The four-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>III</b>
BTB 1110	BTB 1112
DFT 1127	PHY 1101
MAT 1101	WWK 1111
<b>II</b>	<b>IV</b>
BTB 1111	BTB 1114
ELC 1101	FBG 1101
ENG 1101	MSC 1120
WWK 1110	

## Dental Assisting

The Dental Assisting curriculum prepares graduates to assist the dentist in providing treatment services. Functions performed by the dental assistant include dental health education, preparing dental materials, preparing the patient for treatment, taking dental X-rays, maintaining dental supplies and equipment, assisting the dentist providing selected services for the patient, making appointments, maintaining patient records and other office management procedures. Graduates may be employed by dental offices, dental clinics, public health clinics, federal service clinics, dental schools, state health department, dental manufacturers and insurance companies.

Graduates are eligible to take the examination given by the Dental Assisting National Board, Incorporated to become a Certified Dental Assistant.

Individuals desiring a career in dental assisting should, if possible, take biology, mathematics and typing courses prior to entering the program.

**Competencies:**

In the process of successfully completing this program of study, the student will have demonstrated the ability to:

1. Demonstrate a sound grasp of basic skills and knowledge in general studies, biomedical sciences, dental sciences and clinical sciences.
2. Practice dental assisting as an integral member of the dental health team within the ethical and legal framework of the profession with a high standard of competency.
3. Effectively apply oral and written communication skills in interaction with patients, members of the dental team and other health care professionals.
4. Successfully complete the Dental Assisting National Board to become a Certified Dental Assistant.

			<b>Credit</b>
<b>MAJOR COURSES</b>			
DEN 1001	Introduction to Dental Assisting	1	
DEN 1002	Dental Materials I	3	
DEN 1003	Dental Sciences I	4	
DEN 1004	Dental Sciences II	3	
DEN 1006	Dental Materials II	4	
DEN 1008	Dental Office Management I	4	
DEN 1009	Dental Radiology	5	
DEN 1010	Clinical Procedures I	6	
DEN 1011	Dental Office Management II	3	
DEN 1012	Dental Office Practice I	7	
DEN 1013	Basic CPR and Dental Emergencies (C)	2	
DEN 1014	Clinical Procedures II	5	
DEN 1015	Dental Office Practice II	10	
DEN 1016	Oral Health and Nutrition	<u>3</u>	
		60	

**RELATED**

BIO 1121	Human Anatomy and Physiology (C)	5
	or	
BIO G240	Human Anatomy and Physiology (B)	6
	or	
BIO 101	Basic Life Sciences (JS)	5
	or	
BIO 1110	Anatomy and Physiology (S)	5
	Five (5) Credit Hours Required	

**GENERAL EDUCATION**

ENG 101	Grammar (C)	3
	or	
ENG 101	English I (B)	3
	or	
ENG G101	Freshman Composition (B)	5
	or	
ENG 101	Composition I (JS)	5
	and	
ENG 114	Oral Communications (C)	3
	or	
COM G105	Introduction to Communication Studies (B)	5
	or	
ENG 204	Oral Communications (JS)	3
	or	
SPH 161	Fundamentals of Speech Communications (S)	3
	and	
PSY 102	Introduction to Psychology (C)	3
	or	
PSY G105	General Psychology (B)	5
	or	
PSY 105	General Psychology (JS)	5
	or	
PSY 201	Introduction to Psychology (S)	5
	Nine (9) Credit Hours Required	

**TOTAL CREDITS** **74**

**DENTAL ASSISTING**

The four-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>III</b>
BIO1121	DEN1008
DEN1001	DEN1012
DEN1002	DEN1016
DEN1003	ENG101
DEN1010	
DEN1013	<b>IV</b>
	DEN1011
<b>II</b>	DEN1015
DEN1004	ENG114
DEN1006	
DEN1014	
DEN1009	
PSY102	



## *Industrial Electricity*

The Industrial Electricity program is designed to prepare students for the installation, repair and maintenance of electrical equipment. The emphasis is on motors and related control systems, but students who take the basic courses will have sufficient knowledge and skill to work as helpers for electricians or repairmen in house wiring, small appliance repair, industrial maintenance, lineman and related jobs.

<b>MAJOR COURSES</b>		<b>Credit</b>
ELC 1104	Basic Electricity I	8
ELC 1104-A	Basic Electricity I	(4)
ELC 1104-B	Basic Electricity I	(4)
ELC 1105	Basic Electricity II	8
ELC 1115	AC and DC Machinery	7
ELC 1116	Motor Control	5
ELC 1125	Industrial Wiring Practices	6
ELN 1106	Instrument Familiarization	5
ELN 1111	Electromechanical Relays and Symbols	5
ELN 1130	Solid State Devices, Circuits and Symbols	<u>7</u>
		51

**RELATED COURSES**

DFT 1104	Blueprint Reading	3
DFT 1109	Blueprint Reading	3
MAT 1101	Trade Mathematics	5
ELC 1120	Electrical Calculations	5
WLD 1102	Basic Welding	<u>1</u>
		17



# CAPE FEAR COMMUNITY COLLEGE

## GENERAL EDUCATION

ENG 1101	Communication Skills	2
ENG 1102	Communication Skills	2
PSY 1101	Human Relations	<u>3</u>
		7

**TOTAL CREDITS** 75

## INDUSTRIAL ELECTRICITY

The four-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>III</b>
ELC 1104	BPR 1104
ELN 1106	ELC 1115
ENG 1101	ELC 1116
MAT 1101	PSY 1101
<b>II</b>	<b>IV</b>
ELC 1105	BPR 1109
ELC 1120	ELC 1125
ELM 1111	ELN 1130
ENG 1102	WLD 1102

## Industrial Mechanics

The curriculum in Industrial Mechanics prepares students with a broad background in industrial skills required by industry for its mechanics. The individual develops skills in the repair and maintenance of industrial equipment, basic welding and cutting, refrigeration and air conditioning, direct and alternating current, machines and their controls, and related courses.

	<b>Credit</b>
<b>MAJOR COURSES</b>	
AHR 1103 Basic Heating and Air Conditioning	2
ELC 1100 Basic Electricity	2
ELC 1117 Industrial AC Motors and Controls	2
MEC 1113 Shop Processes I	2
MEC 1114 Shop Processes II	2
MEC 1121 Industrial Hydraulics I	2
MEC 1122 Industrial Hydraulics II	2
MEC 1127 Industrial Mechanics I	6
MEC 1127-A Industrial Mechanics I	(3)
MEC 1127-B Industrial Mechanics I	(3)
MEC 1128 Industrial Mechanics II	7
MEC 1129 Industrial Mechanics III	6
MEC 1130 Industrial Mechanics IV	8
WLD 1106 Welding and Burning I	2
WLD 1107 Welding and Burning II	<u>2</u>
	45

## RELATED COURSES

DFT 1104	Blueprint Reading	3
DFT 1105	Blueprint Reading	1
DFT 1108	Blueprint Reading	3
MAT 1101	Trade Mathematics	5
MAT 1102	Trade Mathematics	<u>5</u>
		17

## GENERAL EDUCATION (6-10)

ENG 1101	Communication Skills	2
PHY 1101	Applied Science	4
PSY 1101	Human Relations	<u>3</u>
		9

**TOTAL CREDITS** 71

## INDUSTRIAL MECHANICS

The four-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>III</b>
AHR 1103	BPR 1108
BPR 1104	ELC 1100
MAT 1101	MEC 1113
MEC 1127	HYD 1121
WLD 1106	MEC 1129
	PSY 1101
<b>II</b>	<b>IV</b>
BPR 1105	ELC 1117
ENG 1101	MEC 1114
MAT 1102	HYD 1122
MEC 1128	MEC 1130
WLD 1107	PHY 1101



## Light Construction

The Light Construction curriculum prepares individuals for employment in the building trades industry. Instruction is provided in carpentry, masonry, electrical wiring, and plumbing. Students study applied mathematics, blueprint reading and sketching, safety and other related subjects. They learn the methods used in laying out a small structure, mixing and pouring cement, rough framing, laying brick and block, roofing and exterior finishing.

Graduates may find employment with home builders or with commercial building contractors. They may enter the building trades as apprentices or work as building maintenance mechanics in small industries or public buildings including schools, hospitals, and apartment houses. After sufficient experience in the trade, some workers may establish their own business.

			Credit
<b>MAJOR COURSES</b>			
CAR 1101	Carpentry (Rough)		10
CAR 1101-A	Carpentry (Rough)		(3)
CAR 1101-B	Carpentry (Rough)		(3)
CAR 1101-C	Carpentry (Rough)		(2)
CAR 1101-D	Carpentry (Rough)		(2)
CAR 1102	Carpentry (Framing)		10
CAR 1103	Carpentry (Finishing)		11
CAR 1135	Blueprints and Field Coordination		3
ELC 1109	Electrical Wiring		3
MAS 1101	Masonry		10
PLU 1101	Basic Plumbing		<u>3</u>
			50

### RELATED COURSES

DFT 1110	Building Trades Blueprint Reading and Sketching	5
DFT 1113	Blueprint Reading: Building Trades	5
MAT 1101	Trade Mathematics	<u>5</u>
		15

### GENERAL EDUCATION

ENG 1101	Communication Skills	2
ENG 1102	Communication Skills	2
PSY 1101	Human Relations	<u>3</u>
		7

**TOTAL CREDITS:** 72

## LIGHT CONSTRUCTION

The four-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>III</b>
<b>BPR 1110</b>	<b>CAR 1103</b>
<b>CAR 1101</b>	<b>PLU 1101</b>
<b>ENG 1101</b>	
<b>MAT 1101</b>	<b>IV</b>
	<b>BPR 1135</b>
<b>II</b>	<b>ELC 1109</b>
<b>BPR 1113</b>	<b>MAS 1101</b>
<b>CAR 1102</b>	
<b>ENG 1102</b>	
<b>PSY 1101</b>	

## Marine and Diesel Mechanics

The Marine and Diesel Mechanics curriculum provides training for individuals interested in becoming mechanics to service and maintain the propulsion system for boats and various types of marine equipment. Manual skills in servicing marine and diesel equipment are developed in practical shop work. A thorough understanding of the operating principles of this equipment is provided through classroom instruction, laboratory experiments, group discussions and shop practices.

Marine and diesel engine mechanics maintain and repair mechanical, electrical, hydraulic and pneumatic equipment used on boats and in industrial applications. Mechanics inspect and test equipment to determine the causes of faulty operation; repair or replace defective parts to restore the machine or unit to proper operating condition; and use shop manuals, manufacturers' maintenance manuals and other publications for technical information.

			Credit
<b>MAJOR COURSES</b>			
DIE 1100	Introduction to Gas and Diesel Engines	8	
MDE 1101	Marine and Diesel Engine Theory and Practice I	6	
MDE 1101-A	Marine and Diesel Engine Theory and Practice I	(2)	
MDE 1101-B	Marine and Diesel Engine Theory and Practice I	(2)	
MDE 1101-C	Marine and Diesel Engine Theory and Practice I	(1)	
MDE 1101-D	Marine and Diesel Engine Theory and Practice I	(1)	
MDE 1102	Marine and Diesel Engine Theory and Practice II	7	
MDE 1103	Marine and Diesel Engine Theory and Practice III	8	



MDE 1104	Marine and Diesel Power-Train Systems I	2
MDE 1105	Marine and Diesel Power-Train Systems II	2
MDE 1108	Gas Diesel Fuel Systems I	3
MDE 1109	Gas Diesel Fuel Systems II	3
MDE 1110	Gas Diesel Fuel Systems III	3
PME 1136	Fundamentals of Hydraulics	<u>5</u>
		47

## RELATED COURSES

ELC 1111	Direct and Alternating Electricity	3
MAT 1101	Trade Mathematics	5
PHY 1101	Applied Science	4
PME 1131	Schematics and Diagrams: Marine and Diesel	3
WLD 1101	Basic Welding	<u>2</u>
		17

## GENERAL EDUCATION

ENG 1101	Communication Skills	2
ENG 1102	Communication Skills	2
PSY 1101	Human Relations	<u>3</u>
		7

**TOTAL CREDITS** 71

## MARINE AND DIESEL MECHANICS

The four-quarter sequence of courses recommended for the full-time student is:

**I**  
DIE 1100  
ENG 1101  
MAT 1101  
PHY 1101

**II**  
BPR 1131  
DIE 1101  
DIE 1104  
DIE 1108  
ELC 1111  
ENG 1102

**III**  
DIE 1102  
DIE 1105  
DIE 1109  
PSY 1101  
WLD 1101

**IV**  
DIE 1103  
DIE 1110  
HYD 1136

## Phlebotomy

The Phlebotomy curriculum prepares the graduate to draw blood specimens from patients for the purpose of testing and analyzing blood. The job involves duties related to the preparation and maintenance of equipment used in obtaining blood specimen; the use of appropriate communication skills when working with patients; the selection of venipuncture sites; the care of blood specimen; and the entry of the testing process into the computer, as well as clerical duties associated with record keeping of the blood tests.

	Credit
BIO 1121 Anatomy and Physiology I	5
BUS 1183 Terminology and Vocabulary	3
PBT 1101 Introduction to Health Care Team	1
PBT 1102 Blood Collection Process	2
PBT 1103 Safety, Quality, and Liability	1
PBT 1104 Phlebotomy Clinical Experience	<u>4</u>
	16

## PHLEBOTOMY

Currently, the following sequence of courses will be offered in the Fall Quarter:

BIO 1121  
BUS 1183  
PBT 1101  
PBT 1102  
PBT 1103  
PBT 1104

## Practical Nursing

The Practical Nursing curriculum graduates are prepared to take the National Council Licensure Examination required to practice as a licensed practical nurse. The Practical Nursing curriculum is designed to develop competencies in practicing the following five components of practice as defined by the North Carolina Nursing Practice Act, 1981: participating in assessing the client's physical and mental health including the client's reaction to illnesses and treatment regimens; recording and reporting the results of the nursing assessment; participating in implementing the health care plan developed by the registered nurse and/or prescribed by any person authorized by state law to prescribe such a plan, by performing tasks delegated by and performed under the supervision or under orders or directions of a registered nurse, physician licensed to practice medicine, dentist, or other person authorized by state law to provide such supervision; reinforcing the teaching and counseling of a registered nurse, physician licensed to practice medicine in North Carolina, or dentist; and reporting and recording the nursing care rendered and the client's response to that care.

Licensed practical nurses may be employed in hospitals, nursing homes, clinics, doctors' offices, industry, and public health agencies.

Individuals desiring a career in practical nursing should be encouraged to take math and science courses in high school.

**(This Program is Under Revision.)**

	Credit
<b>MAJOR COURSES</b>	
NUR 101P Fundamentals of Nursing	9
NUR 105P Issues and Trends	3
PHM 1002 Pharmacology	4
NUR 1003 Medical-Surgical Nursing I	11
NUR 1005 Medical-Surgical Nursing II	18
NUR 1009 Maternal-Child Health Nursing	<u>15</u>
	60

<b>RELATED COURSES</b>	
BIO 1003 Introduction to Human Body	5
PSY 250 Growth and Development	<u>5</u>
	10

<b>GENERAL EDUCATION</b>	
ENG 151 English Composition I	5
PSY 150 Introduction to Psychology	<u>5</u>
	10

**TOTAL CREDITS 80**

### PRACTICAL NURSING

The four-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>III</b>
BIO 1003	ENG 151
NUR 101P	NUR 1009
PSY 150	
<b>II</b>	<b>IV</b>
NUR 1003	NUR 105P
PHM 1002	NUR 1005
PSY 250	

## Welding

The Welding curriculum gives students sound understanding of the principles, methods, techniques and skills essential for successful employment in the welding field and metals industry. Welders join metals by applying intense heat, and sometimes pressure to form a permanent bond between intersecting metals.

Welding offers employment in practically any industry: ship-building, automotive, aircraft, guided missiles, heavy equip-

ment, railroads, construction, pipefitting, production shops, job shops and many others.

	Credit
<b>MAJOR COURSES</b>	
MEC 1113 Shop Processes I	2
MEC 1114 Shop Processes II	2
WLD 1119 Basic Arc Welding & Oxy-Fuel Cutting	10
WLD 1119-A Basic Arc Welding & Oxy-Fuel Cutting	(2)
WLD 1119-B Basic Arc Welding & Oxy-Fuel Cutting	(2)
WLD 1119-C Basic Arc Welding & Oxy-Fuel Cutting	(3)
WLD 1119-D Basic Arc Welding & Oxy-Fuel Cutting	(3)
WLD 1122 Commercial and Industrial Practice	3
WLD 1123 Inert Gas Welding (Tig, Mig and Plasma)	9
WLD 1124 Pipe Welding	6
WLD 1125 Certification Practices	4
WLD 1127 Advanced Arc Welding	<u>10</u>
	46

<b>RELATED COURSES</b>	
DFT 1112 Blueprint Reading: Welding	2
DFT 1117 Blueprint Reading: Welding	3
DFT 1120 Blueprint Reading of Pipe Drawings and Pipe Sketching	1
MAT 1101 Trade Mathematics	5
PHY 1101 Applied Science	4
PHY 1102 Applied Science	<u>4</u>
	17

### GENERAL EDUCATION

ENG 1101 Communication Skills	2
ENG 1102 Communication Skills	2
PSY 1101 Human Relations	<u>3</u>
	7

**TOTAL CREDITS 70**

### WELDING

The four-quarter sequence of courses recommended for the full-time student is:

<b>I</b>	<b>III</b>
BPR 1112	BPR 1120
MAT 1101	MEC 1113
WLD 1119	PHY 1102
	WLD 1122
	WLD 1123
<b>II</b>	<b>IV</b>
BPR 1117	ENG 1102
ENG 1101	MEC 1114
PHY 1101	PSY 1101
WLD 1127	WLD 1124
	WLD 1125



# VOCATIONAL COURSE DESCRIPTIONS

## **AHR 1103 - Basic Heating and Air Conditioning**

This is a basic course in heating and air conditioning to acquaint the industrial mechanic with principles, theory, and working knowledge of this of equipment.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

## **AHR 1113 - Servicing Heating Equipment**

An introduction to the servicing and repair procedures for electric, gas, and oil warm air heating systems. Emphasis is placed on students' hands-on practice in servicing, the analysis of operating malfunctions, and the repair of system components. Students will learn systematic procedures for diagnosing and repairing mechanical and electrical malfunctions.

Course Hours Per Week: Class 3, M. Lab 9.

Quarter Hours Credit: 6.

Corequisites: AHR 1115, ELC 1150

## **AHR 1113-A - Servicing Heating Equipment**

An introduction to the servicing and repair procedures for electric, gas, and oil warm air heating systems. Emphasis is placed on students' hands-on practice in servicing.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: AHR 1115, ELC 1150

## **AHR 1113-B - Servicing Heating Equipment**

A continuation of Part A with emphasis on the analysis of operating malfunctions, and the repair of system components. Students will learn systematic procedures for diagnosing and repairing mechanical and electrical malfunctions.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: AHR 1113-A

## **AHR 1115 - Fundamentals of Heating**

An introduction to the fundamentals of warm air heat, including oil, gas, and electric forced air systems. Emphasis is placed upon terminology, operating principles, theory, components and materials utilized in installation, and servicing.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: None

## **AHR 1121 - Principles of Refrigeration**

This course is an introduction to the principles of refrigeration terminology, the use and care of tools and equipment, and the identification and function of the component parts of a system. Other topics to be included will be the basic laws of refrigeration; characteristics and comparison of the various refrigerants; the use and construction of valves, fittings, and basic controls. Practical work includes tube bending, flaring and soldering. Standard procedures and safety measures are stressed in the use of special refrigeration service equipment and the handling of refrigerants.

Course Hours Per Week: Class 3, M. Lab 9.

Quarter Hours Credit: 6.

Prerequisite: WLD 1101

## **AHR 1123 - Fundamentals of Air Conditioning**

Emphasis is placed on the installation, maintenance, and servicing of equipment used in the cleaning, changing, humidification and temperature control of air in an air-conditioned space. Installation of various ducts and lines needed to connect various components is made.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisites: AHR 1121, WLD 1101

## **AHR 1129 - Applied Electricity for Heating, Ventilation and Air Conditioning Systems**

This course will cover the use of test instruments and equipment used in servicing electrical apparatus installation for air-conditioning and heating systems. Emphasis is placed on electrical principals and procedures for troubleshooting the various electrical devices used in air-conditioning and heating equipment. Student will learn how to use test instruments to analyze performance and troubleshoot switches, electrical heating devices, and wiring.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: ELC 1150

Corequisite: ELC 1151

## **AHR 1132 - Air-Conditioning Servicing**

Installation, routine servicing, problem diagnosis, and repair air-cooled air conditioning systems. Emphasis is placed on the correct methods for locating, assembling, wiring, connecting to duct systems, charging, and system start-up and performance checks. Additional emphasis is placed on systematic problem diagnosis and repair procedures for refrigeration, electrical, and control system malfunctions. Students will learn how to properly install, perform routine service maintenance on, evaluate the cooling performance of, and apply systematic problem diagnosis and repair procedures to room cooling units and split and packaged systems.

Course Hours Per Week: Class 3, M. Lab 12.

Quarter Hours Credit: 7.

Prerequisites: AHR 1129, AHR 1121, WLD 1101

Corequisite: AHR 1123

**AHR 1135 - Applied Electronics for Heating, Ventilation and Air Conditioning Systems**

Common electronic control components utilized in HVAC systems. Emphasis is placed upon identifying different electronic components and their functions in HVAC system and motor drive control circuits. Students will learn how to identify these components, describe their functions in control circuitry, and to use test instruments to measure electronic circuit values and to identify malfunctions.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisites: ELC 1150, AHR 1129, ELC 1151

**AHR 1138 - All-Weather Systems: Conventional**

Principles of combination heating and cooling systems including gas-electric, all electric, oil-electric, and other combination systems. Emphasis is placed on proper safety and operational controls, selection and assembly of components, and installation of a complete all weather system. Students will learn how to construct, test, evaluate the performance of, and adjust all-weather conventional systems. In addition, students will learn how to solve service problems and to modify and/or repair an improperly installed system.

Course Hours Per Week: Class 3, M. Lab 9.

Quarter Hours Credit: 6.

Prerequisites: AHR 1115, AHR 1113, AHR 1123, AHR 1132, AHR 1129

**AHR 1139 - All-Weather Systems: Heat Pumps**

Principles of installation, service, and repairing of air-to-air heat pumps. Emphasis is placed on the different refrigeration cycles, selections of the components of a complete system, proper application and installation practices, and service procedures for air-to-air heat pump systems. Students will learn how to properly size and install a complete system, perform routine service procedures, analyze performance, and to apply systematic problem diagnosis and repair procedures.

Course Hours Per Week: Class 4, M. Lab 9.

Quarter Hours Credit: 7.

Prerequisites: AHR 1113, AHR 1132, AHR 1121

**BIO 1003 - Introduction to the Human Body**

This course is designed to help the student gain knowledge about the human body. The types of health are identified as they relate to nurses and patients. Useful signs in the evaluation of health or deviations from health are explained. Lectures will be given on heredity, introductory bacteriology and immunity. Detailed information will then be given on each system of the body.

Course Hours Per Week: Class 4, Lab 2.

Quarter Hours Credit: 5.

Prerequisite: None

**BIO 1121 - Human Anatomy and Physiology**

Persons that will spend their lives working in the medical fields, e.g., dental hygiene, nursing, etc., will find it necessary to have a fundamental knowledge of the structure of the human body. These medical workers at various time may be expected to make judgments as to emergency action and may also be asked to carry out services for individuals which require knowledge beyond the scope of this course. These workers must have a working knowledge of human anatomy and physiology and some concept of the totality of the human body.

Course Hours Per Week: Class 4, Lab 2.

Quarter Hours Credit: 5.

Prerequisite: None

**BPR 1104 - Blueprint Reading**

Students will study interpretation and reading of blueprints. Information is provided on the basic principles of the blueprint: lines, views, dimensioning procedures and notes.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

**BPR 1105 - Blueprint Reading**

Emphasis is placed on further practice in interpretation of blueprints as they are used in industry; study of prints supplied by industry; making plans of operation, introduction to drafting room procedures; sketching as a means of passing on ideas, information and processes.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: BPR 1104.

**BPR 1108 - Blueprint Reading**

This is a general course in interpreting blueprints. Analysis of electrical and pneumatic systems will be emphasized. Mechanical devices including piping, machines, gears, and system color coding will be introduced.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: BPR 1104

**BPR 1109 - Blueprint Reading**

This is a general course in interpretation of blueprints. Analysis of electrical and plumbing systems will be emphasized. Mechanical devices including heat and air, insulation, structure design, and system color coding will be introduced.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: BPR 1104

**BPR 1110 - Building Trades Blueprint Reading and Sketching**

Emphasis is placed on principles of interpreting blueprints and trade specifications common to the building trades. Students develop proficiency in making plan and pictorial sketches.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None



**BPR 1112 - Blueprint Reading: Welding**

Emphasis is placed on a thorough study of trade drawings in which welding procedures are indicated. Interpretation, use and application of welding symbols, abbreviations, and specifications are introduced.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

**BPR 1113 - Blueprint Reading: Building Trades**

Emphasis shall be placed upon reading and understanding all aspects of actual blueprints and the interpretation expected by the architect. Dimensions, symbols, special specifications, etc. are to be emphasized in this course.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**BPR 1117 - Blueprint Reading: Welding**

This is a continuation of DFT 1112 which embodies a thorough study of trade drawings in which welding procedures are indicated. Interpretation, use and application of welding symbols, abbreviations, and specifications will also be studied.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: None

**BPR 1120 - Blueprint Reading of Pipe Drawings and Pipe Sketching**

Students will learn basic principles and methods of reading; reading and dimensioning pipe drawings with emphasis on piping relating to welders.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: None.

**BPR 1131 - Schematics and Diagrams: Marine and Diesel**

This course covers the interpretation and reading of blueprints. It promotes the development of ability to read and interpret blueprints, charts, instruction and service manuals, and wiring diagrams. Information on lines, views, dimensioning procedures, and notes will be covered.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

**BPR 1135 - Blueprints and Field Coordination**

Construction blueprints will be studied and field trips will be made to construction sites in order that students may gain first-hand experience reading project blueprints of jobs under construction presently by contractors. Estimating and actual work procedure will be emphasized in this course.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

**BTB 1110 - Boatbuilding I**

This course introduces the student to the safe and proper handling of power and hand tools in the boat shop. The sharpening, maintenance, and necessary adjustment of tools is stressed so that the student can realize optimum results from the equipment. Also, the student will be introduced to lofting and building a simple flat bottomed boat.

Course Hours Per Week: Class 5, M. Lab 12.

Quarter Hours Credit: 9.

Prerequisite: None

**BTB 1111 - Boatbuilding II**

More advanced hull development will be approached in this course. A jig is constructed from plans that could be used to build a single fiberglass or wooden boat, or a plug from which a mold could be made. The student is introduced to modern fabrics, core materials, and resins used in the fiberglass industry.

Course Hours Per Week: Class 4, M. Lab 12.

Quarter Hours Credit: 8.

Prerequisite: BTB 1110

**BTB 1112 - Boatbuilding III**

This course will introduce the student to wood and glass lamination techniques. The students will build a small sand-wich core fiberglass boat and practice the fairing process, as well as the application of modern marine finishes.

Course Hours Per Week: Class 3, M. Lab 12.

Quarter Hours Credit: 7.

Prerequisite: BTB 1111

**BTB 1114 - Yacht Repair and Renovation**

This course introduces repair principals and methods for wood and fiberglass boats.

Course Hours Per Week: Class 4, M. Lab 9.

Quarter Hours Credit: 7.

Prerequisite: BTB 1112

**BUS 1103 - Small Business Operations**

This course is an introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business and employer - employee relations.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

**BUS 1183 - Terminology and Vocabulary**

This is a thorough course in word study appropriate for use in business, technical and professional offices. It emphasizes spelling and meaning of words, with an in-depth study of word stems, prefixes and suffixes.

Course Hours Per Week: Class 3,

Quarter Hours Credit: 3.

Prerequisite: None

### **CAR 1101 - Carpentry (Rough)**

This course is a brief history of carpentry. Present trends of the construction industry will be covered along with the operation, care, and safe use of the carpenter's hand and power tools used in cutting, shaping, and joining construction materials used by carpenter. Carpentry layout and framing basics will be emphasized in this course.

Course Hours Per Week: Class 6, M. Lab 12.

Quarter Hours Credit: 10.

Prerequisite: None

### **CAR 1101-A - Carpentry (Rough)**

This is a basic summary course in residential construction which will cover such topics as: tools needed in light construction, construction materials, leveling instruments, building layout, plans and codes, footings and foundations, floor framing, wall and ceiling framing, roof framing, roofing materials, windows and exterior doors, exterior wall finish, thermal and sound insulation, interior wall and ceiling finishing, finish flooring, and doors and interior trim. This course will provide information so that the student can plan for new construction or renovation.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

### **CAR 1101-B - Carpentry (Rough)**

Present trends of the construction industry will be covered along with the operation, care, and safe use of the carpenter's hand and power tools. Practice in cutting, shaping, and joining construction materials used by the carpenter will be emphasized. A thorough discussion and assigned lab activities in building layout and construction of foundations will be covered.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: CAR 1101-A

### **CAR 1101-C - Carpentry (Rough)**

This course will cover types of framing for residential construction, both platform and balloon framing. Post and beam construction will also be covered. Basic floor framing for platform construction will be covered and lab assignments made to reinforce this learning.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: CAR 1101-B

### **CAR 1101-D - Carpentry (Rough)**

Present trends of the construction industry will be covered along with the operation, care, and safe use of the carpenter's hand and power tools. In this course, emphasis will be placed on wall and roof framing and those procedures needed to build a residential home.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: CAR 1101-C

### **CAR 1102 - Carpentry (Framing)**

Emphasis is placed on practical application in rough carpentry which consists of: framing, roofing, window and exterior door installation, exterior wall covering, exterior trim, and form work. Roof layout and framing will be emphasized in this course.

Course Hours Per Week: Class 5, M. Lab 15.

Quarter Hours Credit: 10.

Prerequisite: None

### **CAR 1103 - Carpentry (Finishing)**

Millwork as performed by the general carpenter during building construction using shop tools and equipment will be emphasized in this course. Practical applications will include measuring, layout, and construction of door and window frames, stairs, interior and exterior cornice and trim work. Prefabricated materials will also be covered. Exterior and interior trim and finishing carpentry will be studied.

Course Hours Per Week: Class 4, M. Lab 21.

Quarter Hours Credit: 11.

Prerequisite: None

### **DEN 1001 - Introduction to Dental Assisting**

A study of the history of dentistry and dental assisting with an introduction to the role of the dental assistant in modern practice as a member of the dental health team. Includes the education, function, respective professional organizations, laws and ethics governing the practice of dentistry, professional conduct of the dental assistant and an introduction to dental terminology.

Course Hours Per Week: Class 1.

Quarter Hours Credit: 1.

Prerequisite: None

### **DEN 1002 - Dental Materials I**

A study of the physical and chemical properties and origin of dental materials, including the manufacturing process of specific materials. Laboratory exercises are designed to develop competency in skills in manipulation and application of the materials to dental procedures. Emphasis is on gypsum products, waxes, impression materials, amalgam and cavity bases.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: None



## **DEN 1003 - Dental Sciences I**

This course includes two units of dental science and is designed to be taught sequentially or concurrently for flexibility in scheduling. Unit one is the study of embryology, histology, anatomy, physiology and morphology of the human dentition and its supporting structure and environment. Laboratory sessions are structured to facilitate the learning of form, function and identification of oral structures with special emphasis on the identification of the primary and permanent dentition. Unit two is the study of the bones, muscles, blood, lymph and nerve supplies of the head and neck region. Landmarks of the skull are identified and the relationship of head and neck anatomy to dental assisting is emphasized.

Course Hours Per Week: Class 4.

Quarter Hours Credit: 4.

Prerequisite: None

## **DEN 1004 - Dental Sciences II**

This course includes two units of dental science and is designed to be taught sequentially or concurrently for flexibility in scheduling.

Unit One is a study of the basic principles of general and oral pathology, causes and treatment.

Unit Two is a basic study of classifications of drugs commonly used in dentistry, prescribing and administering drugs, as well as therapeutic and adverse effects of drugs. Special consideration will be given to nitrous oxide. The role and responsibility of the dental assistant are emphasized.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: DEN 1003, BIO 1121

Corequisites: None

## **DEN 1006 - Dental Materials II**

A study of physical and chemical properties of dental materials used in restorative dentistry. Laboratory exercises are designed to develop competencies in skills in manipulation and application of the materials in dental procedures.

Course Hours Per Week: Class 2, Lab 4.

Quarter Hours Credit: 4.

Prerequisite: DEN 1002

## **DEN 1008 - Dental Office Management I**

Principles and procedures related to dental office management. Fundamentals of accounting and financial management are applied to dental office procedures. Opportunity for competency development in preparing, processing, maintaining and storing records; communications, scheduling appointments, inventory control and patient management is provided in laboratory skill practice.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: DEN 1001, DEN 1003

## **DEN 1009 - Dental Radiology**

The principles and techniques of exposing, processing, mounting, interpreting, filing and storing intraoral and extraoral radiographic film. Characteristics of film, film selection for various techniques and care of equipment and facilities are included. Radiation physics, biological hazards and protection of patient, operator and others are emphasized. Laboratory and clinical practices are designed according to current legal requirements.

Course Hours Per Week: Class 2, Lab 6.

Quarter Hours Credit: 5.

Prerequisite: DEN 1003

## **DEN 1010 - Clinical Procedures I**

Designed to prepare the student to anticipate the needs of the dentist, to assist in basic procedures and to utilize management skills. This course provides an introduction to the principles and procedures related to operator equipment, instruments, sterilization and chairside dental assisting techniques including four handed dentistry. Major emphasis will be given to principles and procedures of operative dentistry and local anesthesia.

Course Hours Per Week: Class 4, Clinical 6.

Quarter Hours Credit: 6.

Corequisite: DEN 1002

## **DEN 1011 - Dental Office Management II**

Designed to prepare the student for employment as a dental assistant. Ethical, legal and personal responsibilities; testing and certification requirements; professional development and clinical practice experiences will be discussed in group sessions to determine the diversity and depth of learning experiences, and to evaluate and plan subsequent assignments. Computer familiarization will also be introduced.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: Minimum Third Quarter standing in the Dental Assisting Program

## **DEN 1012 - Dental Office Practice I**

A clinical science course in principles and procedures of operative dentistry, local anesthesia, dental operator equipment, instruments, sterilization, charting and patient management. Emphasis is on developing skill competency in anticipating the needs and assisting the dentist in four-handed dental procedures.

Course Hours Per Week: Class 2, Clinical 15.

Quarter Hours Credit: 7.

Prerequisites: DEN 1002, DEN 1003, DEN 1010, DEN 1014

### **DEN 1013 - Basic CPR and Dental Emergencies**

A study of the recognition, prevention and management of dental office emergencies. Laboratory experiences include practice in basic life supporting procedures (CPR), artificial respiration, procedures for relieving foreign body obstruction of the airway and monitoring and recording vital signs, and evaluating medical histories.

Course Hours Per Week: Class 2.

Quarter Hours Credit: 2.

Prerequisite: None

### **DEN 1014 - Clinical Procedures II**

A continuation of Clinical Procedures I including experiences to increase the level of competency in patient management and chairside assisting. Special emphasis is placed on the dental specialties and the dental assistant's role in oral surgery, endodontics, pedodontics, prosthodontics, orthodontics and periodontics. Clinical sessions are designed to provide practical experience in chairside assisting.

Course Hours Per Week: Class 3, Clinical 6.

Quarter Hours Credit: 5.

Prerequisite: DEN 1010

### **DEN 1015 - Dental Office Practice II**

A clinical practice learning experience to increase dental assisting skills to job-entry level competency. Clinical assignments in various dental specialty practices, as well as general dentistry practices, will provide opportunities for advanced skill development in chairside assisting techniques, clinical support and business office procedures.

Course Hours Per Week: Class 2, Clinical 24.

Quarter Hours Credit: 10.

Prerequisite: DEN 1012

### **DEN 1016 - Oral Health and Nutrition**

A study of the etiology, prevention and control of dental caries and periodontal disease with emphasis on the dental assistant's role in oral health education. A clinical learning experience will be provided to establish a minimum proficiency in coronal polishing, communication skills, plaque scoring indices, oral physiotherapy aids, fluorides, accident prevention and periodic recall in patient education. Nutrition and its effect on oral health will also be introduced.

Course Hours Per Week: Class 2, Clinical 3.

Quarter Hours Credit: 3.

Corequisite: DEN 1003

### **DFT 1127 - Marine Drafting**

Students will learn how to read and understand boat plans. Each student will develop a lines plan from a table of offsets using standard marine drafting equipment. There will also be projects designed to give the student practical experience in interpreting blueprints.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: None

### **DIE 1100 - Introduction to Gas and Diesel Engines**

This course promotes the development of a thorough knowledge and ability in using, maintaining, and storing the various hand tools and measuring devices needed in engine repair work. It includes a study of the construction and operation of components of gas and diesel engines, as well as the testing of engine performance, servicing and maintenance of pistons, valves, cams and camshafts, fuel and exhaust systems, cooling systems; proper lubrication, and methods of testing, diagnosing and repairing.

Course Hours Per Week: Class 3, M. Lab 15.

Quarter Hours Credit: 8.

Prerequisite: None

### **DIE 1101 - Marine and Diesel Engine Theory and Practice I**

This course covers the principles of main propulsion of vessels, heavy equipment, and trucks employing internal combustion engines. Construction and various designs of the operational principles of two- and four-cycle internal combustion engines and their related piping systems, cooling, and lubrication are covered. Also, procedures for "lighting off" will be covered.

Course Hours Per Week: Class 2, M. Lab 12.

Quarter Hours Credit: 6.

Prerequisite: None

### **DIE 1101-A - Marine and Diesel Engine Theory and Practice I**

This course covers introduction and various designs of the two- and four-cycle internal combustion engines.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

### **DIE 1101-B - Marine and Diesel Engine Theory and Practice I**

This course covers the principles of main propulsion of vessels, heavy equipment, and trucks employing internal combustion engine.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: DIE 1101-A

### **DIE 1101-C - Marine and Diesel Engine Theory and Practice I**

This course will cover related parts of the cylinder block of the two- and four-cycle engine; lubrication and cooling will be covered in relationship to these parts.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: DIE 1101-B



## **DIE 1101-D - Marine and Diesel Engine Theory and Practice I**

This course will cover the cylinder head and all the moving parts related to the two- and four-cycle engine including lubrication, cooling, and piping systems.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: DIE 1101-C

## **DIE 1102 - Marine and Diesel Engine Theory and Practice II**

This course deals with two and four-cycle diesel engines that are used for propulsion of vessels and heavy equipment and trucks. In the construction and design of various two-cycle engines and their related system, cooling lubrication and air intake systems are covered. Procedure for "lighting off" and preventive maintenance will be discussed.

Course Hours Per Week: Class 3, M. Lab 12.

Quarter Hours Credit: 7.

Prerequisite: None

## **DIE 1103 - Marine and Diesel Engine Theory and Practice III**

This course deals with the administration of gasoline and diesel engineering plants through the recording and filing of performance data. The course is also a continuation of two- and four-cycle engines, and rebuilding, which includes preventive maintenance and periodic checks of diesel engines. This course will cover in great detail troubleshooting of two- and four-cycle engines.

Course Hours Per Week: Class 3, M. Lab 15.

Quarter Hours Credit: 8.

Prerequisite: None

## **DIE 1104 - Marine and Diesel Power-Train Systems I**

This course is a study of principles and functions of Marine and Diesel Power-Train Systems and disassembly and assembly of clutches, torque converters, torque dividers, fluid couplings, manual transmissions, planetary systems, and automatic transmissions.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

## **DIE 1105 - Marine and Diesel Power-Train Systems II**

This course is a study of principles and functions of Marine and Diesel Power-Train Systems and disassembly and assembly of marine gears, drive lines, final drives, differentials, and rear axles.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

## **DIE 1108 - Gas and Diesel Fuel Systems I**

This course provides a thorough study of the fuel systems of the marine and diesel engines, fuel pumps, carburetors, fuel injection pumps and air intake systems. Characteristics of fuels, types of fuel systems, special tools and testing equipment for the fuel systems of marine and diesel engines are studied.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **DIE 1109 - Gas and Diesel Fuel Systems II**

This course is a continuation of the study of fuel systems injection pumps. Characteristics of fuels, types of fuel systems, special tools and testing equipment for the fuel systems of marine and diesel engines will be covered.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **DIE 1110 - Gas and Diesel Fuel Systems III**

This course is a continuation of the study of fuel systems and injection pumps. Characteristics of the types of fuel systems, special tools, and test equipment for the fuel systems of marine and diesel will be covered.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **ELC 1100 - Basic Electricity**

This course is an introduction to basic principles of electricity, basic electric units and symbols, Ohm's Law, and the use of electrical measuring instruments. This course is not as in-depth as ELC 1104, Basic Electricity.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

## **ELC 1101 - Practical Marine Electricity I**

Emphasis is placed on an understanding of the basic 12-volt (DC) direct current electrical system from boat batteries. The (AC) alternating current system which is on some small vessels is also discussed. The installation and wiring of the various lights, electrical instruments and electric motors on a boat is studied in great detail. Safety is stressed throughout the course.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **ELC 1104 - Basic Electricity I**

This course gives an introduction to basic theories and principles of electricity, as well as to basic electric units, symbols, and Ohm's Law regarding series and parallel circuits.

Course Hours Per Week: Class 5, M. Lab 9.

Quarter Hours Credit: 8.

Prerequisite: None

**ELC 1104-A - Electricity I**

This course gives an introduction to basic theories and principles of electricity, as well as to basic electric units, conductors, and insulators.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: None

**ELC 1104-B - Electricity I**

This course gives an introduction to basic theories and principles of electricity, as well as to basic electric units, conductors, and insulators.

Course Hours Per Week: Class 3, M. Lab 3.

Quarter Hours Credit: 4.

Prerequisite: ELC 1104-A

**ELC 1105 - Basic Electricity II**

This course gives an introduction to alternating current theory, sine wave generation and analysis, induction, reactance, impedance, phase relations, transformers, and power factor corrections.

Course Hours Per Week: Class 5, M. Lab 9.

Quarter Hours Credit: 8.

Prerequisite: ELC 1104

**ELC 1109 - Electrical Wiring**

This course gives an introduction to basic theories and principles of electricity, as well as basic units, symbols, and Ohm's Law regarding series and parallel circuits. The course also gives a basic principle of residential and commercial wiring according to National Electrical Codes and area building codes.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

**ELC 1111 - Direct and Alternating Electricity**

This course provides a thorough study of the electrical system of the equipment powered by gas and diesel engines. Battery cranking mechanisms, generators and alternators, ignition systems, accessories and wiring special tools, and use of testing equipment for electrical systems are covered.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: None

**ELC 1115 - AC and DC Machinery**

AC and DC motors, generators, voltage and current regulators, speed control, reversing and braking systems, and characteristics are studied. The student will physically setup and wire various systems and then collect data to determine characteristics and efficiency of system.

Course Hours Per Week: Class 4, M. Lab 9.

Quarter Hours Credit: 7.

Prerequisite: ELC 1104

**ELC 1116 - Motor Control**

This course is an introduction to control components, i.e., contractors, motor starters, pilot devices, code considerations, types of control, control circuits, analysis of control circuits, maintenance and troubleshooting of motor and control circuits including solid state.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: ELN 1111

**ELC 1117 - Industrial AC Motors and Controls**

This course will cover the fundamental concepts in single and polyphase circuits, machines, and controls. Instruction in the use of electrical test equipment in circuit analysis and troubleshooting will be given with practice in wiring electrical motors and motor control centers. Emphasis on OSHA safety regulations in the field of industrial electricity will also be given.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: ELC 1100

**ELC 1120 - Electrical Calculations**

This course is designed to improve the Industrial Electricity student's ability to solve problems relating to his or her field. Topics covered will include a review of series, parallel and combination circuits, power wire sizes, and line losses. Also included will be mathematics related to alternating current fundamentals including square root, Pythagorean Theorem, and practical trigonometry. Specific problems related to the electrical code book will also be discussed when applicable.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 1101

**ELC 1125 - Industrial Wiring Practices**

Wiring methods in industrial complexes are covered, including wire sizing, splicing, and code. Raceways, wireways, and duct systems are introduced. Accepted method of wiring motors, motor starters, relays, and transformers are emphasized.

Course Hours Per Week: Class 4, M. Lab 6.

Quarter Hours Credit: 6.

Prerequisite: ELC 1115

**ELC 1150 - Basic Electricity**

A study of the basic electrical principles and components needed for troubleshooting modern machines. A basic study is made of direct and alternating current and electrical distribution in series and parallel circuits. The students become familiar with the following electrical terms: insulators, conductors, semiconductors, coil, solenoids and polarity, safety with the use of electricity, relays, and electrical devices is stressed at all times.

Course Hours Per Week: Class 2, Lab 2.

Quarter Hours Credit: 3.

Prerequisite: None



## **ELC 1151 - Applied Wiring Diagrams**

Common electrical control components with an emphasis on their function in a control circuit and the symbols utilized to identify them in wiring diagrams. Students will learn how to read wiring diagrams in order to identify and describe the functions of the control components and to diagnose and repair component malfunctions in an electrical control system.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **ELM 1111 - Electro-Mechanical Relays and Symbols**

This course is an introduction to various types of relays (AC and DC), operating principles and characteristics. Various relay symbols are introduced. Maintenance and construction of relays are studied.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: ELN 1106

## **ELN 1106 - Instrument Familiarization**

Students will learn the functional use of various tools and test equipment used in the electrical field.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: None

## **ELN 1130 - Solid State Devices, Circuits, and Symbols**

This course is an introduction to the theory and applications of solid state devices used in industry, especially solid state control circuits for motors and related equipment. Basic transistor circuits, vacuum tubes, and basic vacuum tube circuits are covered. Programmable control systems are examined and programmed.

Course Hours Per Week: Class 5, M. Lab 6.

Quarter Hours Credit: 7.

Prerequisites: ELC 1105, BPR 1104, ELN 1111

## **ENG 1101 - Communication Skills**

This course covers the basics of communication and their application to on-the-job activities. The student is introduced to memos, work estimates, work orders, necessary forms and records, and the writing of effective letters, including the application letter and resume. Emphasis is placed on descriptions and giving directions.

Course Hours Per Week: Class 2.

Quarter Hours Credit: 2.

Prerequisite: None

## **ENG 1102 - Communication skills**

This course covers the task skills involved in preparing for and undergoing an interview for a job. It also covers visualizing concepts and data, finding references through library use, taking notes, and organizing, writing, and presenting orally a report related to the student's field of study.

Course Hours Per Week: Class 2.

Quarter Hours Credit: 2.

Prerequisite: ENG 1101

## **FBG 1101 - Fiberglass Mold Making**

Student will be introduced to the basics of constructing male and female molds for fiberglass production.

Course Hours Per Week: Class 4, M. Lab 9.

Quarter Hours Credit: 7.

Prerequisite: MSC 1112

## **HYD 1121 - Industrial Hydraulics I**

This course covers the fundamentals of hydraulics and its uses in industry. A study of power transmission through hydraulics, the course will cover components and their function, pumps (gears and vanes), cylinders, and control valves.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

## **HYD 1122 - Industrial Hydraulics II**

A continuation of MEC 1121, this course will cover industrial hydraulic circuits and components including governors, valve control and instrument control in detail.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: MEC 1121

## **HYD 1136 - Fundamentals of Hydraulics**

The fundamentals of hydraulics and its use to transmit power are studied, including the following components and their function: pumps, lines, cylinders, valve, gauges and controls. Proper care, use, installation and storage of test equipment, minor repairs, assembly, removal and replacement of equipment are also covered.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: None

## **MAS 1101 - Masonry**

The history of the bricklaying and the masonry industry, raw material, terminology, clay and shell brick, concrete block, mortar, laying foundations, cutting masonry materials, bonding, and the use, care, and maintenance of tools will be covered. Practice is given in selecting the proper mortars, layout, and construction of various building elements using brick and concrete block in order to develop skill in these areas.

Course Hours Per Week: Class 5, M. Lab 15.

Quarter Hours Credit: 10.

Prerequisite: None

## **MAT 1101 - Trade Mathematic**

This course is designed to enhance the mathematical capabilities of each student. The general context of the course will be the coverage of the four basic operations working in the areas of whole numbers, common fractions, and decimals. The principles of prime numbers, dimensional analysis, percentage, ratios and proportions will also be covered. The course endeavors to use practical problem where possible.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: None

**MAT 1102 - Trade Mathematics**

This course further enhances the mathematical capabilities of the student through the study of powers and root of numbers, solutions and manipulations of formulas, first and second degree equations, linear measure, areas and volumes of regular geometric figures. Practical word problems are used in all areas of study where applicable.

Course Hours Per Week: Class 5.

Quarter Hours Credit: 5.

Prerequisite: MAT 1101

**MEC 1113 - Shop Processes I**

This course is a study of practices used in metalworking shops. Introduction to how materials can be utilized and to the processes of shaping, forming, and fabricating metal. Demonstration of the metalworking lathes, grinders, drills, milling machines, shapers, planers, saws, broachers, gear-cutting machines, and finishing machines. Students will study the capabilities of these machines.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

**MEC 1114 - Shop Processes II**

This course will cover the comparison of the unit-production and mass-production systems. Casting, forging and allied processes, welding and sheet metalworking processes are demonstrated and discussed. Mass-production methods are studied in relationship to precision dimensional control.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: MEC 1113

**MEC 1127 - Industrial Mechanics I**

This course is an introduction to the nature of work required of an industrial maintenance mechanic and his role in industry. It will deal with the identification, care, and use of basic hand tools used by a maintenance mechanic, including portable power tools and measuring devices. Also included are special tools and holding devices, methods of layout and fabrication, and threading and tapping. Benchwork such as filing, shaping, and forming metal parts will be practiced. OSHA standards will be stressed and will involve good housekeeping and shop safety.

Course Hours Per Week: Class 4, M. Lab 6.

Quarter Hours Credit: 6.

Prerequisite: None

**MEC 1127-A - Industrial Mechanics I**

This course is first of a four-part series. It is an introduction to the nature of work required of an industrial maintenance mechanic and his role in industry. Instruction will cover hand tools and measuring devices. Drilling and tapping will be discussed. Safety and housekeeping will be stressed.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

**MEC 1127-B - Industrial Mechanics I**

This course will introduce the student to threading systems, tap, dies, and drill sizes. Holding devices will be discussed. Bench work will be performed. Filing, shaping, and layout of parts will be covered.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: MEC 1127-A

**MEC 1128 - Industrial Mechanics II**

This course is a study of the various types of industrial piping systems and plumbing fixtures. It will cover types of pipe and fittings, methods of installation and repair, and include threading and pipefitting. Valves and other plumbing fixtures will be covered with emphasis on installation service and repair of existing systems.

Course Hours Per Week: Class 4, M. Lab 9.

Quarter Hours Credit: 7.

Prerequisite: None

**MEC 1129 - Industrial Mechanics III**

This course will cover the installation, repair, and servicing of mechanical power transmission equipment, including gears, belts, and roller chains. Basic rigging procedures and use of jacks, chain falls, and floor lifts will be covered. Emphasis will be on troubleshooting and routine maintenance tasks normally performed by the industrial mechanic.

Course Hours Per Week: Class 4, M. Lab 6.

Quarter Hours Credit: 6.

Prerequisite: None

**MEC 1130 - Industrial Mechanics IV**

This course will cover centrifugal and positive displacement type pumps and their principles of operation and theory. Training in assembly, parts replacement, packing and mechanical seal installation will be covered. Emphasis will be placed on motor pump alignment.

Course Hours Per Week: Class 5, M. Lab 9.

Quarter Hours Credit: 8.

Prerequisites: MEC 1127, DFT 1104

**MSC 1120 - Marine Systems**

Students are introduced to the fundamentals of marine plumbing, inboard engine alignment, thru-hull installation, and simple wire and line splicing.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None



## **NUR 101P - Fundamental of Nursing**

This course introduces the student to nursing and to basic nursing knowledge and skills. Concepts of illness-wellness, basic needs, growth and development, stress and adaptation, and communication. The role of the LPN in the health care setting is addressed. The role of nutrition in meeting clients needs is correlated throughout the course. Selected nursing procedures are demonstrated and opportunities for practice and return demonstration of proficiency are provided in the laboratory setting. The student will have selected patient assignments in affiliating agencies and perform beginning nursing procedures. The nursing process is introduced as a systematic method of planning and providing nursing care.

Course Hours Per Week: Class 6, Lab 4, Clinical 3.

Quarter Hours Credit: 9.

Prerequisite: Acceptance in the LPN Program

Co/Prerequisites : BIO 1003, PSY 150

## **NUR 105P - Issues and Trends**

This course is designed to present current issues and trends which impact on the nursing profession. Legal, ethical, economical, and professional concerns are examined.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **NUR 1003 - Medical-Surgical Nursing I**

Medical-Surgical Nursing is a two quarter course designed to acquaint the student to patients experiencing various types of common deviations in health. Med-Surg I is an introduction to the physical and psycho-social needs of the hospitalized adult experiencing illness. Homeostasis and the effects of stress are examined. Emphasis is placed on various types of common deviations in health, basic human growth and development and use of the nursing process to understand the nursing care needs of these patients. Nutrition and pharmacology are co-related to various types of illness and disease processes. Practice laboratory introduces and provides opportunity for practice of physical assessment, and more complex nursing skills. Clinical experiences in affiliating agencies are designed to provide opportunities to apply knowledge and learned technical skills and to develop beginning skills in use of the nursing process.

Course Hours Per Week: Class 6, Lab 2, Clinical 12.

Quarter Hours Credit: 11.

Prerequisites: BIO 1003, NUR 101P, PSY 150

Corequisites: ENG 118, PHM 1002, PSY 250

## **NUR 1005 - Medical-Surgical Nursing II**

Medical-Nursing II is a continuation of NUR 1003 with examination of the physical and psycho-social needs of the patient experiencing various types of common deviations in health. Concepts from previous nursing and related courses are incorporated to continue examining the various types of illness and disease processes. The nursing process is utilized in both the classroom and clinical areas to identify and assist in meeting physiologic and psycho-social nursing care needs of patients. Nutrition and pharmacology are correlated to common illness and disease processes.

Course Hours Per Week: Class 13, Clinical 15.

Quarter Hours Credit: 18.

Prerequisite: NUR 1003

Corequisite: NUR 105P

## **NUR 1009 - Maternal-Child Health Nursing**

This course is designed to assist the student in acquiring the fundamental knowledge required in maternity and pediatric nursing. The family's experience of pregnancy, birth and the postpartum period is presented with emphasis on the nurse's role in contributing to a successful outcome. The normal infant and the newborn experiencing difficulty are discussed. Care of the growing child and the family reinforces the students knowledge of growth and development of the child from infancy through adolescence. The child's experience of hospitalization presents the emotional impact of hospitalization on the family and the child at various age levels. The student is introduced to the etiology, treatment and nursing care of common disorders that affect the child from infancy through adolescence. The study of pharmacology as it related to the nurse's role in drug administration in maternal-child care is continued. The importance of nutrition and current nutritional trends are discussed. Content progresses from the simple to the complex as the student continues to develop skill in the application of the nursing process. Clinical experiences are provided in acute, ambulatory, and outpatient settings .

Course Hours Per Week: Class 11, Clinical 12.

Quarter Hours Credit: 15.

Prerequisites: NUR 101P, BIO 1003, PSY 250, NUR 1003, PHM 1002

## **PBT 1101 - Introduction to Health Care Team**

This course is an introduction to the health care team. It describes the role of the phlebotomist in the relationship to other health care workers. The primary responsibility of the phlebotomist is for collecting blood specimens from patients for the purpose of laboratory analysis. The phlebotomist becomes familiar with the various types of health care institutions and departments in which he/she must interact. This course provides the student with an understanding of the basic concepts of communication and professional behavior. Topics include personal and patient interaction, professional protocol, communication skills, and the legal complications of the work environment.

Course Hours Per Week: Class 1.

Quarter Hours Credit: 1.

Corequisites: PBT 1102, PBT 1103

**PBT 1102 - Blood Collection Process**

The phlebotomist is introduced to the blood collection concept. The students become familiar with collection equipment to include the various types of anticoagulants and blood collecting equipment. The study introduces the collection of other body fluids and of substances that can interfere in clinical analysis of blood constituents.

Course hours per week: Class 1, Clinical 3.

Quarter Hours Credit: 2.

Corequisites: PBT 1101, PBT 1103

**PBT 1103 - Safety, Quality, and Liability**

Health care workers must have respect for infection control policies, safety, quality assurance and liability. This course introduces the phlebotomist to the importance of infection control, quality control, quality assurance, total quality management, laboratory safety and liability.

Course hours per week: Class 1.

Quarter Hours Credit: 1.

Prerequisites: PBT 1101, PBT 1102

**PBT 1104 - Phlebotomy Clinical Experience**

New Hanover Regional Medical Center has an affiliation with Cape Fear Community College to allow the students to do the clinical laboratory rotation. The laboratory rotation will be a nine (9) week and twelve (12) hours per week phlebotomy experience. The students will complete a minimum of:

100 successful venipunctures

25 successful skin punctures

5 observations of arterial punctures

The phlebotomy supervisor at New Hanover Medical Center will supervise the students during the clinical rotation and will submit a completed evaluation form for each student. The form will be submitted to Cape Fear Community College at the conclusion of the rotation. This evaluation will be part of the final student grade.

The student will be responsible for documenting each successful and unsuccessful venipuncture, skin puncture and arterial observation. The documentation must be submitted to the program coordinator at the conclusion of the rotation.

Course Hours Per Week: M. Lab 12.

Quarter Hours Credit: 4.

Corequisites: PBT 1101, PBT 1102, PBT 1103

**PHM 1002 - Pharmacology**

The focus of this course is on basic concepts of pharmacology with a special emphasis on the role of the nurse in the clinical application of drug therapy. This course prepares the student to define terminology related to pharmacology and to discuss basic principles, types of drug preparations, storage considerations and legal responsibilities as well as to compute proper dosages and administer pharmacologic agents. Practice opportunities will be available during didactic and laboratory course components.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisites: BIO 1003, NUR 101P

**PHY 1101 - Applied Science**

This course is an introductory study of the properties of materials and the principles of electricity and magnetism. Topics included are measurement, solids, liquids, gases, electric circuits, electromagnetism, simple machines, and systems of measurement. This course is a lab course to furnish hands-on experience.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: None

**PHY 1102 - Applied Science**

A continuation of PHY 1101, this course views the simple machines along with power, energy, motion, and mechanical advantage. This is a lecture and lab course mainly designed for mechanical emphasis.

Course Hours Per Week: Class 3, Lab 2.

Quarter Hours Credit: 4.

Prerequisite: PHY 1101

**PLU 1101 - Basic Plumbing**

This course is designed for the Light Construction curriculum and is a study of the various types of residential piping systems and plumbing fixtures. It will cover types of pipe and fittings, methods of installation and repair, and include threading and pipefitting. Valves and other plumbing fixtures will be covered with emphasis on installation service and repair of existing system.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

**PSY 1101 - Human Relations**

This is a study of basic principles of human behavior. The problems of the individual are studied in relation to society, group membership, and relationships within the work situation.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

**WLD 1101 - Basic Welding**

Emphasis is placed on welding demonstrations by the instructor and practiced by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment are stressed. Practice will be given for arc welding and flame-cutting methods applicable to mechanical repair work.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None



## **WLD 1102 - Basic Welding**

Emphasis is placed on welding demonstrations by the instructor and practiced by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment are stressed. Practice will be given for arc welding and flame-cutting methods applicable to mechanical repair work.

Course Hours Per Week: M. Lab 3.

Quarter Hours Credit: 1.

Prerequisite: None

## **WLD 1104 - Basic Gas Welding**

Safe and correct methods of assembling and operating the welding equipment applied to the cutting and assembling of the metal tubing utilized in air-conditioning, heating, and refrigeration systems. Practice will be given to brazing and soldering aluminum, copper, and steel tubing.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

## **WLD 1106 - Welding and Burning I**

This course involves welding demonstrations by the instructor and practiced by students in the welding shop. The metallurgy of welding is discussed, as are safe and correct methods of assembling and operating the welding equipment. Practice will be given for surface welding and flame-cutting. Emphasis is placed on electric arc and gas welding methods applicable to mechanical repair work. Brazing is also covered.

Course Hours Per Week: M. Lab 6.

Quarter Hours Credit: 2.

Prerequisite: None

## **WLD 1107 - Welding and Burning II**

This course is a continuation of WLD 1106, giving the students additional practice in arc welding which will improve their efficiency as a welder. Emphasis will be on safety and use of arc and gas welding equipment. Practice will include oxy-acetylene welding, brazing, soft solder and silver solder as needed in mechanical, ship and dock repair work. Also, there will be a demonstration, by instructor, of Tig, Mig, and Plasma welding.

Course Hours Per Week: M. Lab 6.

Quarter Hours Credit: 2.

Prerequisite: WLD 1106

## **WLD 1119 - Basic Arc Welding and Oxy-Fuel Cutting**

Emphasis is placed on the operation of the different types of AC and DC welding machines, and maintenance of welding machines. Studies are made on welding heats, polarities, and different types of welding electrodes used in joining various types of metals in the arc welding process. The set up and use of oxy-fuel cutting equipment is studied. After the student is capable of setting up welding equipment, practice weld beads will be made in all positions. Safety procedures are emphasized throughout the course in the use of tools and equipment.

Course Hours Per Week: Class 7, M. Lab 9.

Quarter Hours Credit: 10.

Prerequisite: None

## **WLD 1119-A - Basic Arc Welding and Oxy-Fuel Cutting**

This course will cover the operation of the different types of AC and DC welding machines, and maintenance of welding machines. Studies are made of welding heats, polarities, and different types of welding electrodes. After the student is capable of setting up welding equipment, practice weld beads will be made in the flat and vertical positions.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

## **WLD 1119-B - Basic Arc Welding and Oxy-Fuel Cutting**

Further studies are made on different types of welding electrodes used in joining various types of metals in the shielded metal arc welding process. The setup and use of oxy-fuel cutting equipment is learned. Practice cuts will be made. Various cutting equipment and practice welds will be made in the overhead and horizontal positions with safety emphasized throughout.

Course Hours Per Week: Class 1, M. Lab 3.

Quarter Hours Credit: 2.

Prerequisite: None

## **WLD 1119-C - Basic Arc Welding and Oxy-Fuel Cutting**

This course will cover the maintenance of welding machines and oxy-fuel cutting equipment, cutting of steel to measured lengths and cutting bevels on plate steel, and making fillet welds and butt welds in all positions. Safety is emphasized throughout the course.

Course Hours Per Week: Class 2, M. Lab 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **WLD 1119-D - Basic Arc Welding and Oxy-Fuel Cutting**

Further studies of electrical current AC and DC, welding electrodes and fluxes, welding machines, oxy-fuel cutting equipment, gases, and different types of steel will be covered.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: None

## **WLD 1122 - Commercial and Industrial Practices**

This course is designed to build skills through practices in simulated industrial processes and techniques: sketching and laying out on paper the size and shape description, listing the procedure steps necessary to build the product, and then actually following these directions to build the product. Emphasis is placed on maintenance, repairing worn or broken parts by special welding applications, field welding, and non-destructive testing and inspection.

Course Hours Per Week: Class 3.

Quarter Hours Credit: 3.

Prerequisite: WLD 1119 or WLD 1127

**WLD 1123 - Inert Gas Welding (Tig, Mig, and Plasma)**

This course is an introduction and practical operations in the use of inert gas arc welding. A study will be made of the equipment, operation, safety, and practice in the various positions. A thorough study of such topics as principles of operation, shielding gases, filler rods, process variations and applications, and manual and automatic welding.

Course Hours Per Week: Class 7, M. Lab 6.

Quarter Hours Credit: 9.

Prerequisite: WLD 1119 or WLD 1127

**WLD 1124 - Pipe Welding**

This course is designed to provide practice in the welding of pressure piping in the horizontal, vertical and horizontal-fixed position using shielded metal arc welding processes according to Sections VIII and IX of the ASME code.

Course Hours Per Week: Class 4, M. Lab 6.

Quarter Hours Credit: 6.

Prerequisites: WLD 1122, WLD 1123

**WLD 1125 - Certification Practices**

This course involves practice in welding the various materials to meet certification standards. The student uses various tests including the guided bend and the tensile strength tests to check the quality of his or her work. Emphasis is placed on attaining skill in producing quality welds.

Course Hours Per Week: Class 3, M. Lab 3.

Quarter Hours Credit: 4.

Prerequisites: WLD 1122, WLD 1123

**WLD 1127 - Advanced Arc Welding**

This course will be a continuation of WLD 1119 in order to give the student additional practice in welding plate steel of all thickness and in all positions to American Welding Society Codes. All safety procedures will be emphasized throughout the course. This course will enable the student to be better prepared to pass welding tests in industry and become a certified welder.

Course Hours Per Week: Class 7, M. Lab 9.

Quarter Hours Credit: 10.

Prerequisite: WLD 1119

**WWK 1110 - Modern Yacht Joiner Practices I**

In this course the student will learn the necessary skills to rough-in the interior bulkheads, soles, furniture, and cabinetry in the modern yacht.

Course Hours Per Week: Class 3, M. Lab 6.

Quarter Hours Credit: 5.

Prerequisite: BTB 1110

**WWK 1111 - Modern Yacht Joiner Practices II**

This course is an extension of Modern Yacht Joiner Practices I. Emphasis is placed on the finished woodworking and trim. Doors, drawers, and moldings will be constructed. Production jigs to increase efficiency will be utilized. Modern oils, paints, and varnish applications will be practiced.

Course Hours Per Week: Class 2, M. Lab 6.

Quarter Hours Credit: 4.

Prerequisite: WWK 1110



## EXTENDED SERVICES

### *Continuing Education Department*

#### **General Course Information**

CFCC provides training in many areas through its Continuing Education Department programs. Classes are held at the Wilmington downtown campus and at other locations throughout New Hanover and Pender counties. Most classes prepare individuals for employment, or upgrade workers already employed. Besides meeting economic needs, some classes help to improve the adults social and cultural standing in the community.

Training is also provided for employees of area industries and public agencies. Once a specific need has been established, classes can be offered in that area at virtually any time. Full details can be obtained by calling the office of the Vice President of Continuing Education, (910) 251-5670.

#### **Admission Requirements**

Generally, any person who is 18 years of age or older, or whose high school class has graduated, is eligible for admission to Continuing Education classes. Applicants are usually admitted on a first-come, first-serve basis. Some classes have specific admission requirements. In such cases, applicants will be properly notified.

#### **Registration and Special Information**

For information concerning the current class offerings, and their locations in New Hanover county, call (910) 251-5670. For Pender County classes, CFCC Burgaw Campus, call (910) 675-1439/259-4966. For CFCC Hampstead Campus classes, call (910) 270-3069.

The Pender County CFCC Burgaw Campus is located in the Burgaw Industrial Park. This location is approximately five blocks south of downtown Burgaw next to Burgaw Middle School.

The Pender County CFCC Hampstead Campus is located in the former Topsail Middle School, Hampstead.

Students register at their first class meeting. The individual's Social Security Number is required for registration. Course cost (tuition) will usually be \$35.00 plus the cost of any required text(s) and supplies. A high school diploma is not required for registration. Registration fees for Continuing Education Department classes are not always refundable. The Refund Policy, as set forth by the North Carolina General Assembly, follows in the next paragraph. Many classes are

FREE for N. C. citizens 65 years of age or older. However, for classes designated as self-supporting all students must pay the tuition fee and costs for required text and supplies.

#### **Refund Policy**

Please note the following Refund Policy for EXTENSION PROGRAMS, Statutory Authority G.S. 1150-5; Eff. February 1, 1976; Amended Eff. September 1, 1993; August 1, 1983; August 17, 1981; July 8, 1980.

#### **.0203 EXTENSION PROGRAMS**

(d) Registration Fee Refunds. A refund shall not be made except under the following circumstances:

(1) For classes that are scheduled to meet four times or less, a 75% refund shall be made upon the request of the student, if the student officially withdraws from the class(es) prior to or on the first day of the class(es).

(2) For classes that are scheduled to meet five or more times, a 75% refund shall be made upon the request of the student if the student officially withdraws from the class(es) prior to or in the official 30% point of the class(es).

(3) For classes beginning at times other than at the beginning of the quarter, applicable provisions as noted in Subparagraphs (d) (1) and (2) of this rule apply. For contact hour classes, 10 calendar days from the first day of the class(es) is the determination date.

**IMPORTANT:** Occupational extension courses are designed for the specific purposes of training individuals for employment, upgrading the skills of persons presently employed, and retraining others for new employment in occupational fields. Students repeating an occupational class more than two times may be charged a higher tuition fee based on actual class contact hours.

#### **Continuing Education Program Offerings**

**Emergency Medical Technician Programs**—For information & class schedules, call (910) 251-5681.

Emergency Medical Technician training prepares the student to perform basic patient care in a pre-hospital setting. After successful completion of the course, a state examination is required for certification.

**Insurance Programs**—For information & class schedules, call (910) 251-5680/251-5681

CFCC's Continuing Education Department provides continuing education certified insurance classes as mandated by the North Carolina Department of Insurance. Provider #9090.

**Electrical Contractors' Renewal Course Programs**—For information, call (910) 251-5680/251-5681.

The Electrical Contractors' Renewal Courses are held throughout the year. This provides Electrical Contractors the six hours

of mandatory continuing education credits required to maintain a license.

**Computer Instructional Programs**—Call (910) 251-5689 for information on classes at Fort Fisher & CFCC-Wilmington. Call (910) 259-4966/675-1439 for classes at CFCC-Burgaw, and (910) 270-3069 for classes at CFCC Hampstead.

Computer classes are offered throughout the year. New classes begin monthly. Check the various CFCC campuses for computer courses currently available.

**N.C. General Contractors Residential Licensing Seminars**—For information, dates and times, call (910) 251-5689.

## *Business & Industry Services*

For information & upcoming seminars, call (910) 251-5699.

The Small Business Center provides educational training opportunities, distributes business-related information, and provides business counseling and referral services for residents of New Hanover and Pender Counties who are either considering starting a new business, expanding their business, or need assistance with their existing business.

The Business & Industry Services Center can help with the training needs of area businesses, industries, and municipalities. Working with a representative from your organization, a training specialist will help you to identify training needs and initiate a customized program with maximum flexibility at a minimum cost.

Telephone registration is required for all Business & Industry Services Seminars and the Export Outreach Program. To register, call (910) 251-5696 / (910) 251-5643 / (910) 251-56990 / FAX (910) 251-5698. Please have your social security number available.

**Export Outreach Program**—The Export Outreach Program, developed by the International Trade Division of North Carolina Department of Commerce, walks a company through the export process, step by step, with real life examples and detailed information on support resources.

**Zenger-Miller Training**—CFCC is certified to offer Zenger-Miller training in Frontline Leadership for management, Working for nonsupervisory employees, Team Leadership for improving team performance and Facilitating Successful Meetings.

The Business & Industry Services Division can help you customize a skill-building training system that will help your employees reach their full potential. This training system consists of comprehensive classroom sessions that use realis-

tic, multi-industry video models; creative, clear workbooks; job-related skills and practices; and back-to-the job skill-transfer aids. This is not just “awareness” or orientation—this is skills-building of the highest quality.

**Customized Workshops or Seminars for Businesses & Industries**—CFCC can customize workshops or seminars for your business or industry. Some examples of training are as follows: Forklift Refresher, Confined Spaces, Bloodborne Pathogens, CPR, etc.

**Community Service Programs**—For information, call (910) 251-5670.

## *Employment Readiness (HRD/JTPA)*

The Employment Readiness Division (HRD/JTPA) includes the following programs for adults 16 years of age or older: The Human Resources Development Program, The Single Parent/Displaced Homemaker Program, The JTPA Employment Readiness Training Program, and The JTPA Adult Basic Literacy Centers (ABLE Center).

**Human Resources Development Program (HRD)**—For information, call (910) 251-5685.

The Human Resources Development (HRD) Program offers continuous six-week classes throughout the year to help adults who are unemployed, underemployed, or looking for further education. Programs are subject to change without notice. Call (910) 251-5685 for further information.

HRD teaches job preparation skills such as resume writing, correctly completing job applications, and interviewing skills. Self-awareness, motivation, and self-esteem building are also stressed through this program. Other HRD courses are tailored to address specific areas. Examples of these are Basic Typing Refresher, and Basic Computer Refresher. Family Enrichment/Parenting classes are also offered. All HRD classes are free to the public.

**Employment Readiness Training Program Center (ERTP)**—For information, call (910) 251-5686.

CFCC provides employment and training services to JTPA (Job Training Participant Act)-eligible persons enrolled in the Human Resources Development, Adult Basic Education, and the New Hanover and Pender County “JOBS” Programs. The main function of the ERTTP is to provide assistance for JTPA-eligible participants as they develop employable skills.

**Single Parent/Displaced Homemaker Program**—For more information, call (910) 251-5687.



CFCC's Continuing Education Department provides educational and instructional costs, and other assistance, to single parents and displaced homemakers.

### *Basic Skills*

The Basic Skills Division includes the following programs for adults 16 years of age or older, who wish to begin, continue, or expand their educational skills: Adult Basic Education (ABE), General Education Development (GED), Adult High School Diplomas (AHS), Compensatory Education (CED), and English As A Second Language (ESL). All classes are offered free at convenient times and locations. Anyone under 18 years of age must have school and parental release forms.

**Adult Basic Education (ABE) Classes**—For information, on dates and times, call (910) 251-5682.

The ABE program is for persons 18 years or older who have not graduated from high school, and who function below the 9th grade reading level. Students receive individualized instruction in basic math, language, and reading. These classes improve adults' basic skills so that they can enroll in and successfully complete their GED or Adult High School Diploma classes.

**General Education Development (GED) Classes**  
For more information dates and times, call (910) 251-5682.

The GED program is for persons 16, or older, who have not graduated from high school and function above the 9th grade reading level. Students receive individualized instruction to prepare for the five areas of the GED exam. Persons who pass the GED will receive a high school equivalency certificate. GED classes are offered on all CFCC campuses.

**Pre-GED Tests**  
For information on test dates and times, call (910) 251-5684.

Individuals may wish to take the free Pre-GED test to measure readiness for the official GED exam. Anyone who fails the official GED by 10 points, or more, must wait six months before taking the GED exam again.

**GED Tests**  
For information test dates and times, call (910) 251-5684.

Individuals wishing to take the high school equivalency exam (GED) should complete an application at least two weeks before the test date. Each person must provide proof of age, identity, and N. C. residency. (A valid N. C. Driver's License or N. C. Special ID will satisfy these requirements.) The cost is \$7.50.

**Adult High School Diploma (AHS) Classes**  
For registration dates and times, call (910) 251-5678 / (910) 251-5679.

The AHS program is for persons 16 or older who have not graduated from high school and wish to obtain a high school diploma. Students take courses to complete the required 20 units and must also pass the N. C. Competency Test. To enroll, students must furnish a transcript of previous high school credits and have proper release forms if under 18 years of age.

**Compensatory Education Program Classes**  
For information, call (910) 251-5682.

This program prepares adults with mental retardation to be self sufficient. Areas of classroom instruction include community living, consumer education, vocational education, math, social science, language, and health. Documentation of mental retardation is required before enrollment.

**English As A Second Language (ESL) Classes**  
For more information, call (910) 251-5683.

This program is for adult students whose native language is not English. Instruction focuses on English skills that will enable students to interact effectively in the community and at the work place. Persons wishing to attend classes may enroll at the class sites.

### *New Industry Training*

One of the basic objectives of Cape Fear Community College is to stimulate the creation of more challenging and rewarding jobs for the people of our area by providing a customized training service to new and expanding industries. Subject to only minimal limitations, this College, in cooperation with the Industrial Services Division of the State Department of Community Colleges, will design and administer a special program for training the production manpower required by any new or expanding industry creating new job opportunities in North Carolina.

This program includes the following services:

1. Consultation in determining job descriptions; defining areas of training; and in prescribing appropriate course outlines, training schedules, and materials.
2. Selecting and training of instructors. These instructors may be recruited from the company and from outside sources.
3. Payment of instructors' wages for the duration of the training program.
4. Provision of suitable space for a temporary training facility prior to the completion of the new plant, should such temporary space be required. This may be space with Cape Fear Community College or leased space in the community.

5. Assumption of installation costs of equipment in the temporary training facility.

6. Payment for one-half the cost of nonsalvageable materials expended in the training program.

The purpose of this service is to help a new or expanding industry meet its immediate manpower needs and to encourage each industry to develop a long-range training program of its own to satisfy its continuing replacement and re-training needs.

For further details of this service, contact Cape Fear Community College, Wilmington, North Carolina, or the Director of the Industrial Services Division, North Carolina Department of Community Colleges, Raleigh, North Carolina.

## *Center For Academic Enhancement*

On the sixth floor in the rear of the library, students may receive individual and small group tutoring in Technical, Vocational, College Transfer and General Education courses after submitting a signed Instructor Recommendation Form. Assistance in the CAE has been designed to help students acquire needed skills in reading, grammar and mathematics that will allow them to be successful in their studies.

The CAE maintains a resource of software programs that students can use to review and prepare for assignments. The supplemental computer assisted instruction is available on an individual student basis and to instructors who reserve time slots to bring their entire class to the CAE.

## *Distance Learning*

Vision Carolina is a Business-Education Partnership for the purpose of developing a fiber optic interactive-video, distance-learning network for North Carolina universities, community colleges, public schools, and medical centers. There are two separate interactive video networks in North Carolina, one located in New Hanover County and another in Gaston, Lincoln, and Mecklenburg counties.

Each site contains a classroom equipped with the monitors, cameras, and microphones necessary for interactive sessions with all sites.

Offerings on the network include two types:

**Courses** - Long term courses (semester/quarter length) take precedent over short term events and must be submitted through the EPN Curriculum Committee (Will Johnson, 251-5632).

**Short Term Events** - In order to facilitate the many ideas that all of the New Hanover County sites have introduced, a brochure is published. The brochure is updated periodically. (Linda Flowers, 251-5107)



## *Teleconferencing*

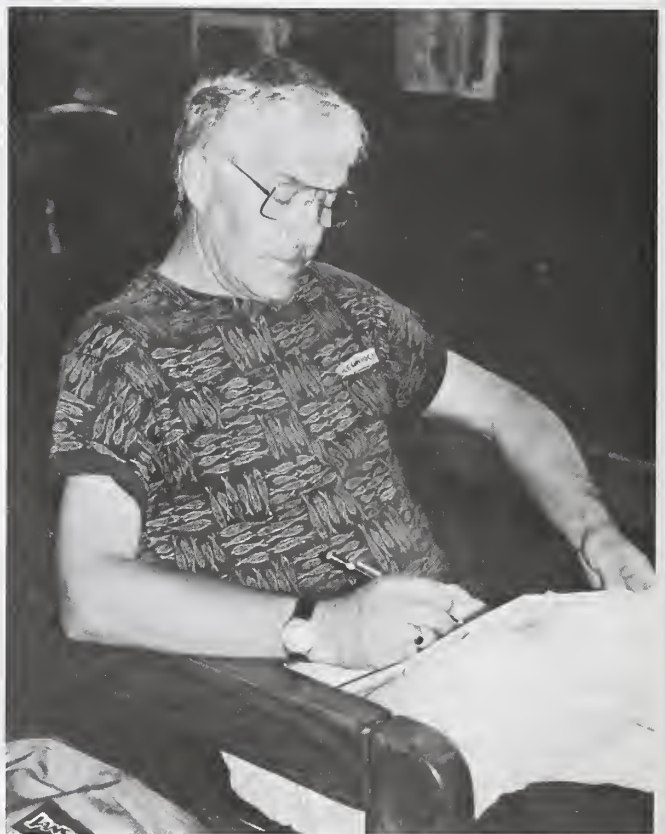
Cape Fear Community College has downlink capabilities via a satellite dish to receive teleconferences which may originate from anywhere in the nation. These teleconferences represent a wide range of interests including: Health Care, Higher Education, Law Enforcement, Small Business, Photography, plus many more.

These teleconferences are shown in the Teleconference Center (S-501) and broadcast over large screen television monitors. The Teleconference Center has a seating capacity of 50 persons.



## *Telecourses*

Cape Fear Community College offers, on a semester-to-semester basis, various courses for credit that are delivered by television. These independent-study courses are aired on your local Public Broadcasting Service (PBS) station. As a telecourse student, you are required to come on campus fewer times than students in traditional classroom settings. You must, however, attend an orientation session and take course tests on campus. The TV programs serve as your lectures. You will have an instructor whom you should contact for any help with the course. You register for telecourses in the same manner as you would for any other curriculum course. Some courses are college transfer. Check with your advisor about particular telecourses. Refer to current schedule for telecourse offerings.



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